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Original Studies.

STIMULANTS TO BLOOD VESSELS AND THEIR SEQUELÆ\*

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During passing upon a discussion of the histological details of the subject we may, with advantage, look back on some pages of history, so that a true perspective may show us the course of events which have prepared the way for our present knowledge. Let us remember the circumstances, the names of those surgeons who worked in comparative darkness, when the light of surgical truth had been barely kindled.

First let us picture ourselves laid out on the campaign in Italy in 1510 as surgeon to Colonel-General of Infantry Don. de Montgomm. This was the age when bleeding at war poured into the wounds to check the hemorrhage, when the supply of oil failed, as it frequently did, the wounds were sealed with the red hot iron. Later all great surgeons, Ambrose Pare first directed and then copied. He at once noticed that the wounded who were treated by the surgeons suffered more than those who were left alone. Translating his observations into actions, he refused to employ the red hot iron as a cauter, and became the first surgeon to place a ligature on arteries and veins. The instruments which he invented for making wounds—such as the even & hook operations for exploring the track of a missile—are to this same generation similar to those we use at present. Ambrose Pare may therefore be looked upon as the first surgeon who treated gunshot wounds with any real success.

After Harvey's discovery of the circulation of the blood in 1628 many

\* Part I of the 17th International Congress of Military Medicine and Hygiene, 1900, p. 1342.

left them much on this branch of surgery when we may briefly mention a doctor who recommended the plan of amputation for treating aneurysm. Morel, who created the aneurysm at the siege of Besançon in 1674. Jean-Baptiste Denon, physician to Louis XIV, who performed the first transfusion of blood in a man who was dying from excessive hemorrhage.

Passing to the eighteenth century we note Pott, the inventor of the water transfusion. Blandin, who advised digital ligatures for aneurysm, and John Hunter, who had those able translators on which the whole of surgical pathology is built. During that epoch brilliant advances were made in allied sciences, such as anatomy, physiology, chemistry and physics. We give for man a guide to these sciences, perceiving and comparing with them. Lord Lister evolved the doctrine of antiseptic surgery. How can we forget the clinicians, surgeons and the famed "Angel" Napoleon I. Larrey. Present in every great battle: 400 wounds, many, and those wounded himself, he was perhaps the most successful military surgeon in history. We pass on to Melisson surgeon to the Emperor Napoleon III, who, with his experienced guide, topped with pusillitas discovered the bullet on the foot of Garibaldi. Finally in this final review, we would remind you of that brilliant and famous surgeon, Langerhans.

Coming down to the present day, we gratefully acknowledge the work of all those in the War of 1914-18, who have contributed to our knowledge of injuries of blood vessels and their sequels. Practically in this connection we are indebted to Sir George Mathew, on whose writings and translations this paper is largely based.

All the whilst we offer an apology for the somewhat dogmatic statements which will appear in the course of this paper, because it is manifestly impossible to bring every aspect and each divergent view before you within the limit of twenty columns. Nevertheless we can assure you that most of the methods and facts have been fully verified by the stamp of active service practice. As such, they are partly entitled to respect, if not agreement. For the sake of simplicity the subject matter will be discussed according to the following classification:—

- (1) General considerations.
- (2) Localized aneurysms.
- (3) Wounds of arteries.
  - (a) Lacerated.
  - (b) Transversing perforations.
  - (c) Complex wounds.
- (4) Wounds of veins.
- (5) Rupture of wounded vessels.
- (6) Sequels of wounds of blood-vessels.
  - (a) Hemorrhage.
  - (b) Damage to the parts supplied by the injured vessel.
  - (c) Transfusion aneurysm.

- (7) Methods of treating injured blood-vessels
- (8) Treatment of aneurysms generally
- (9) Treatment of special aneurysms

(6) **General Considerations.**—It is generally accepted that injuries to blood vessels differ in no essential particulars from those of the soft parts or other organs. Two factors, however, being exceptional difficulties in the way of surgical interference. The first is their situation with regard to the vessel in the vicinity of their vital function. The brachial brachio-axillary trunks, with but a small reserve of collaterals. The descending aorta is frequently rendered difficult or inaccessible. The latter factor is an important point which cannot be over-estimated. Here we may be permitted to observe that aneurysms of aorta have been—on the point we are now considering—considered problems of vital nature purely from an anatomical aspect, and too little regard for the physiological ones. Unless an injured blood-vessel can be restored to duty or even 'light duty' a rupture waits in vain. To a very large extent we estimate the worth of any blood-vessel by its capacity for carrying out its work. Our sympathy is all the more keenly felt when we follow up to an artery, for instance, the severity of the lesion is measured by the resulting damage to the peripheral parts supplied by that vessel. In the same manner diseases such as arterio-sclerosis or Raynaud's disease only too well have been of or denominated functional diseases the gravity of the case. By applying such general observations to surgical problems in this particular sphere we are enabled to make more accurate diagnosis and formulate lines of treatment with greater hopes of success.

(7) **Unmistakable Characteristics.**—These particular forms of injury to the vessels are more frequently observed in nature rather than civil practice. In the latter, aneurysms whereas in many instances those in the former. These aneurysms are usually followed by early spontaneous thrombosis, and such lesions are often overlooked and consequently not recorded owing to obliteration of the lesion. The actual area of the lesion is usually confined to a far greater degree than would suggest itself to the surgeon. This fact forms their leading characteristic clinically.

The practical significance is great, as will be gathered from the following examples of the sequelae—

- (a) In the slightest grades, the clot forms at the site of the ruptured intima. The thrombus may be the source of emboli, although only a lateral thrombus, not obstructing the entire lumen, be present. Generally the small clot becomes rapidly covered by endothelium from the adjacent intima.
- (b) Although the lesion may heal spontaneously, a weak point is left in the wall, which is liable to distension at a later date. This is particularly true when the muscular coat is torn as well as the intima.

- (c) In infected wounds the presence of a contained or partly lacerated vessel is the most frequent source of secondary hæmorrhage. Such a vessel is of course due to diminished local resistance to infection as a definite structure. At the time of the injury the contained often passes unrecognized on account of the absence of physical signs.
- (d) In either infected or noninfected wounds if the contusion has been sufficient to destroy the vitality of the fibres of the vessel wall traumatic aneurism may develop subsequently. The closer comparison of the vessel walls with their normal blood-supply, referred to in the previous paragraph only emphasizes how prone this liability becomes.
- (e) Thrombosis, either partial or complete, will produce a permanent lowering of the attention to the tissue supplied by the vessel. Muscle atrophy or anæmic gangrene, according to the degree of thrombosis follows. In this case the focus at the periphery depends entirely on the failure or function of an artery situated normally.

Before discussing wounds of the arteries, it is well to bear in mind three related features. Thus—

- (1) The anastomotic connection may have lowered the vitality of the margin of the vessel of the artery to a degree which under inspection and even digital palpation cannot determine.
- (2) Such injury may be very extensive without the vessel.
- (3) The wound may not only have suffered by contusion, but, as a result of overlying by deep-seated, it may be treated at a considerable distance from the normal wall.
- (4) QUANTITY OF ANTERIOR —
  - (a) Lateral
  - (b) Transversing perforations
  - (c) Complete anastomosis
  - (d) *Anterior*—These are transverse, oblique or longitudinal according to the direction of the long axis of the vessel.

The least important are those anæmic perforations which are produced by small fragments of metal from an exploded shell. Although these often heal spontaneously, it is remarkable how small an opening anæmically remains patent. Thus we note the manner in which the constant function of the artery interferes with the process of repair. Other causes demand not for their complete and rapid recovery, but an artery torn, of necessity, remains at work.

From the surgical aspect the most satisfactory results are obtained from lacerated longitudinal lesions where the ends have been split rather than torn. These may often be repaired by suture without material diminution of the function of the vessel.

Transient sounds of the various type which occur when some thin a quarter of the middle is involved, and when more than half the wall is torn a change of tone of the sound takes place. Such an event greatly increases hemorrhage, especially as the advantages of complete resection are prevented by the remaining undivided part of the arterial wall.

(3) *Fractured Perforators*.—In these injuries both aspects of the vessel are wounded. It is conceivable that vessels, much smaller in caliber than the helix itself, may sustain this class of injury, which is an excellent illustration of lateral displacement produced by a rapidly travelling bullet.

(4) *Complete Severance*.—These are very common in vessels susceptible of much displacement or when they are struck on a zone of comparative tension, as when the surrounding tissues are torn.

(5) *Wounds of Vessels*.—These differ from wounds of the various vessels in consequence of the comparative tenacity of their walls and the small amount of muscular tissue between the intima and adventitia. Owing to the relatively slow rate of the blood stream, thrombosis is much more common. When lacerated or severed by irregular tears of metal, the wall of a vein may become trapped and may long escape.

At this point we may turn for one moment from purely military surgery to illustrate a functional disturbance caused by injury to veins by quoting an example from one of our own patients.

The man was admitted to hospital with a fracture of the penis. The medical history of a transient movement having occurred during coitus was clearly given. Instantly this is the only condition under which such an unfortunate accident can occur. On examination the characteristic features of the skin of the penis and scrotum were destroyed, except where the pink glans was curled towards the purple prepuce. On the left side of the body of the penis about half-way was a large swelling, the size of a walnut. Rapid incision was adopted, and the extravasated blood was rapidly absorbed; the swelling however, remained. After a week the general condition of the patient entirely changed. Instead of being cheerful, he became sullen and morose. This was concealed by the patient bearing down that the penis had lost its function. The prostatic fossa became empty, but the distal half beyond the swelling failed. In spite of the doubtful prognosis reserved at the beginning by surgical intervention was undertaken. During the operation it was observed that the tumor diagnosis of the left corpus cavernosum had been torn, with consequent extravasation of blood into the subcutaneous tissue. A large thrombus was lifted out of the cavity in the cavernous plexus where a small artery at one of the two lamellae was bleeding profusely. An arterio-venous anastomosis was in the process of formation. The patient made a complete recovery with the physiological power of the penis unimpaired. Such an extensive outcome serves to emphasize the importance of considering function in the surgical treatment of injured veins.

(6) *Rupture of Mayhew's Veins*.—Completely divided vessels may

beal spontaneously or those closed by ligature. Perforations and small lateral wounds, even of great arteries such as the aorta, may also heal spontaneously. In such cases the injured line becomes united by clot, while the main aspect of this is protected from the force of the blood stream by the formation of a pronounced thrombus. In a very short time the endothelium from the intima covers the latter.

When the openings gaps their edges become irregular in outline, the intima and adjacent blood together swing to occupy of the vascular coat. Thus an arterial aneurysm is formed, which commonly communicates with a femoral or carotid. Spontaneous closure of such spontaneous, this place by the lateral adhesion of neighbouring structures especially veins or nerves taking a parallel course.

Severe contusion or non-penetrating laceration of the walls of the vessels is followed by spontaneous thrombosis. In these circumstances the lumen of the vessel is permanently occluded.

A sharp distinction is drawn between such thrombi and those which are attached to a small and broken capry. The latter form an extensive source, one with the vessel wall except the point actually damaged; they do not allow the flow of blood to cease and finally they are completely absorbed.

#### (K) SEQUELS TO INJURY OF BLOOD-VESSELS —

##### (a) Hemorrhage

##### (b) Damage to the parts supplied by the injured vessel.

##### (c) Treatment measures

(a) Hemorrhage.—The signs of both primary and secondary hemorrhage being so well known need not be mentioned here, so the treatment of such will only be described. However before discussing these, it seems desirable to add a note on the temporary control of hemorrhage from wounded arteries. Mechanical pressure by an adjacent piece of lint is common and this explains being useful at stopping primary hemorrhage. This former may also be responsible for some cases of secondary hemorrhage should the wound become infected. Complete distention by means which, after opening the heart or a large vessel, move forwards in the circulation to form embolic masses at the distal sites is not rare. These emboli become covered with clot, and typical signs of local obstructions develop.

#### TREATMENT OF PRIMARY HEMORRHAGE

Local.—Bleeding vessels in an open wound are always ligatured at the earliest possible moment. Possible exceptions to the general rule may in cases where the deep vessels in the palm of the hand, the sole of the foot or the root of the neck are involved.

When injured vessels, especially those of large arteries are visible in open wounds they are ligatured whether bleeding or not. If however, a



containing of the vessel, with perhaps thrombosis, occurring, usually, the process of contraction may produce effects noticed in the purple red parts.

The most fortunate of wound cases are those in which one of the forms of traumatic aneurism develops, because time is then given for some adjustment of the arterial circulation before the need for surgical intervention becomes acute.

The aneurism in the limbs which often occurs severely from primary aneurism in the arteries. They retain their normal outline, but increase in firmness as consequence of the increasing a distended state. The latter is produced by rapid arterial changes, together with an evolution of some fluids into these elements. The aneurism may increase to a varying degree but in some cases a progressive change continues until a state corresponding to Volkmann's ischemia is reached. Rapid swelling of the limbs is rare after a wound of the vessel, except in those cases where a general systemic infection from a wound of the soft parts is associated with such a lesion.

Should a vessel suffer obliteration, a certain loss of volume is created, however good the extent of the result may be. The peripheral blood-pressure in the limb is lowered from 10 to 20 mm of mercury and the peripheral pulse better requires its former strength and volume.

Some idea of prevalence with which gangrene follows exposure to large arteries may be gathered from a series of 662 cases in which gangrene of a varying extent occurred to no less than 178, or 27.0 percent. The liability to gangrene varies in different vessels. In the same order reverse the following statistics are valuable in showing this liability:—

	Percent
Common Iliac	100
Popliteal	14.1
Carotid	26.6
Femoral	20.1
Subclavian	15
Brachial	16
Radial	17

Although these figures compare unfavorably with the 6 to 12 per cent given in textbooks as following exposure of large arteries, it should be remembered that the former, during war time, were often complicated by large lacerated and infected wounds exposure to large arteries, or fractures to bones.

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The treatment of gangrene differs in no particular from the later of putrefaction, followed in most practice.

(iv) *Traumatic aneurysms*.—Among 1,034 injuries to the great vessels within some form of aneurysm occurred in 545 cases, or 54.4 per cent. Observations of a large number of these during the late war showed that the cavity of a traumatic aneurysm rarely represented the loss of blood which resulted primarily from the wound of the vessel. The extravasated blood coagulated, the wound in the vessel wall is closed by clot which, on turn, is supported externally by a thrombus. Such a condition may lead to a spontaneous cure.

More commonly the suppurating interval also develops and thus the opening in the vessel wall is exposed to the full force of blood-pressure from within. In this manner a cavity is formed and gradually in the centre of the mass of coagulated blood. Consecutive layers of fibrin are deposited on the outer aspect of the wall of the new cavity; until finally this becomes covered by an endothelial lining. Meanwhile the original external clot dissolves, becomes differentiated from the surrounding tissue, and leaves the hole open which a definite size of fibrous tissue is built.

The mode of formation of the sac in arterio-venous aneurysms resembles the above, the sac being developed, with one exception in connection with the artery. New artery and vein may communicate with each other in at least eight different ways according to the position of the sac. Thus:—

- (i) Simple arterio-venous anastomosis
- (ii) The inferior artery and vein
- (iii) Sac on one side of artery and direct anastomosis of artery and vein on opposite aspect
- (iv) Similar to above, but second sac between artery and vein
- (v) Sac with artery and vein communicating by a common opening
- (vi) Sac with artery and vein communicating by separate openings
- (vii) Sac springing from free side of artery and second sac from free side of vein
- (viii) Sac springing from artery with which the proximal end of a completely divided vein communicates

From a practical as well as a sanitary point of view, considerable difference in the relative importance of the arterial and arterio-venous forms of traumatic aneurysms exist.

The arterial is by far the more serious. Inasmuch it tends to rupture in one more rapidly and it is more liable to bear on account of the greater internal pressure to which its walls are subjected. Danger from rupture is most likely to occur in the haemorrhagic stage when the formation of the sac, as well as a state of imperfect development. During this phase a movement of the surrounding tissues such as relaxation of the limb, may be sufficient to tear the thin edges of the developing sac from the vessel in the wall of the artery. Secondary haemorrhage takes place in

—compensatory, consisting in other vessels branching out to replace some of the lost segments.

The value of secondary haemorrhage, in the event of a failure to graft successfully, is a result of the tendency of arterial anastomosis to extend and rapidly involve large areas of peripheral tissue on the vascular trunk itself, as on a neighbouring structure made more dangerous and less surgical interference than in the case of arterial anastomosis.

The various venous anastomoses are not only less prone to become septic, but they even tend to become fistulous and discharge matter owing to the venous acting as a safety valve which decreases the full force of the blood-pressure on the walls of the vein.

Owing to these modes of development, the transplantation of isoplastic structures in the wall of traumatic vascular tears is comparatively common, nerves especially being liable to become involved in the same injury.

(3) HISTORY OF VASCULAR INJURY. *Primary Vascular Injuries*.—Injuries have already been made to the treatment of haemorrhage but now various definite lines of procedure, proved by experience in the laboratory will be formulated.

At the Inter Allied Surgical Conference held in 1927 it was concluded that, contrary to the principle accepted hitherto, simultaneous ligatures of both artery and vein when both vessels are wounded does not give rise to increased risk of gangrene. In point of fact, the risk of gangrene is diminished thereby. There tend to be no anastomoses when the vessel is ligated to the artery, that simultaneous ligature of the vein is to be recommended.

In certain situations, more particularly the thigh, when primary haemorrhage has been free, a temporary conduit to maintain the circulation has been employed with some success. Tissue whose work is then and many other spheres complete our education, designed a tube for this purpose. This tube after being coated with paraffin, is tied into the divided ends of the vessel and left in this position for three or four days. Although anastomosis eventually takes place, suitable care has been given for the development of the collateral circulation. Many cases have been cited from the most of anastomotic gangrene by this device.

Wound of blood vessels is, however, the daily method by which ideal results can be obtained. Unfortunately this procedure can only be undertaken in the primary stage when there is reasonable hope of maintaining the vessels free from infection. Here, as in every other region of the body, absolute asepsis forms the keynote in the art of flawless surgery. As a general rule, intermediate operations are not advised between the wound and final steps.

In performing closure of the vessels the following maxims are not to be as a guide towards perfecting the special surgical technique required. There have been proved to possess a very high and practical value:—

- (a) Lateral wounds involving not more than one third of the calibre

is the vessel in fact torn? (3) *Direct*.—Hemorrhage from the third of the commonest regions, those in subdural space, is stopped after resection of the damaged segment.

(a) Hemorrhage from a vessel is stopping, stops from the artery, then one of an artery is, not closed.

(b) Very few vessels with (especially) the large (200-300) vessels have been closed with parallel wire, which the best results to be obtained.

(c) The most satisfactory method for control is the control of the internal and the peripheral.

(d) The most satisfactory method for control is the control of the internal and the peripheral. —In the case of a large vessel, direct ligature on the arterial side of the internal carotid artery, under the following conditions —

(a) Control of the internal artery from the carotid.

(b) Direct ligation of the internal carotid artery, under the following conditions —

(c) Control of the internal artery from the carotid.

(d) Control of the internal artery.

(e) Pressure on neighboring structures such as the carotid artery to control.

(f) Secondary hemorrhage or signs of extending infection of the lacerated structures.

Feeling the above an important article is preferable at this stage, especially if direct and active primary hemorrhage has occurred. The necessary operations necessary are rarely to be undertaken without further loss of blood, which may be fatal to the patient even the life of the patient.

In the emergency stage the treatment may be summarized briefly by putting specific lines of procedure. Although the details submitted may not receive general acceptance, we venture to hope that general agreement will be reached on the main principles laid down.

Spontaneous retraction is rare. It occurs most frequently in the case of peripheral aneurysms but hardly ever in active-venous aneurysms.

Direct ligation of the vessels implicated in the method generally applicable to all cases. Proximal ligation is never resorted to, except where circumstances render it unavoidable.

Direct ligation may be combined with cauterization of the site. This, however, should be avoided if extensive dissection is required. Ligation is collected branches or neighboring structures may be caused thereby.

Where practicable, control of the wounds of the large vessels should always be considered as preferable to any other method. Only the great length of time required and the need for particular technical skill prevent the method becoming an ideal result.

Arterial aneurysms, although they usually show an initial tendency to contract and become limited, eventually enlarge again when the patient

resumes his normal life. All require surgical intervention, which is advised during the quiescent period.

*Active venous aneurysms*, on the other hand, do not show the same inclination to enlarge, but during an active life the venous obstruction steadily increases. As a general rule operation is advised.

*Arteriovenous aneurysms* may often be disregarded, especially those in the upper extremity, so as the case of small vessels. When, however, they give rise to pain or interfere with the circulation, nature of the aneurysm opening through the skin open very soon and interfere with work.

(5) *TREATMENT OF SPECIAL ANEURYSMS*.—A few remarks on the treatment of aneurysms of special arteries will conclude this paper. While it is recognized that each individual case will be judged on its merits, we consider that the basis of treatment in these aneurysms aneurysms lies more in local than general rules, to those who are called upon to decide what is the best method of procedure.

*Cerebral Vessels*.—Except in cases of emergency, proximal ligation of the common carotid artery is avoided. The risk of secondary hemorrhage and the occurrence of embolism are very real. In addition proximal ligation by itself frequently fails to effect a cure. The best treatment is ligation described below.

In active venous aneurysms both the common carotid and the internal jugular vein are ligatured. This is recommended whether the vein be injured or not.

*Axillary Vessels*.—Ligation of the artery and vein immediately above and below the wound is devoid of danger, and is preferred to ligation of the artery alone. Proximal ligation of either the artery or the third part of the subclavian may be considered as an emergency operation only.

*Gluteal and Ischio*.—It is very advisable to ligature the internal iliac artery on the wounded side first before attempting to find the bleeding point in the branch. These vessels are very liable to run into the pelvis and the patient may die from hemorrhage before the bleeding ends are secured unless proximal ligation has been performed at the outset.

*Femoral Vessels*.—The bleeding is controlled by an elastic tourniquet. The divided ends are then tied. A proximal ligation placed on the common femoral has little influence in stopping hemorrhage from the branches of the profunda. Tether's rule has furnished the best results here.

*Popliteal Vessels*.—Ligation should be done. After active primary hemorrhage, Tether's rule may be given a trial. A tourniquet is very dangerous at this point owing to the probability of gangrene.

The other treatment of ligation of a large artery is a hard call for almost as much care and attention as the operation itself. Immediately the operation is completed, the limb is wrapped up in warm cotton wool anything which may interfere with the circulation, such as tight bandaging or splints is rigidly avoided. Warmth in the way of constant heat is

supported by two small bottles as shown, being placed beneath the bed muscle. It was largely owing to the lack of these precautions that the published literature on invertebrate siphon function.

#### CONCLUSIONS

I. *Argemone*. Contractile waves—beginning in blood vessels follow on an ebb and flow of particular from those of soft parts to other regions, but two further long evoked contractions in the way of everted siphons. A) these contractions were not of constancy of their total function.

II. *Homarus*. Contractile waves—these were frequently observed in siphon, rather than over siphon. These waves are usually followed by early spontaneous throbbings, and such throbbings are often developed and consequently not recorded owing to obliteration of the siphon. The actual area of the siphon invariably extends to a far greater degree than the siphon (siphon) would suggest. These practical significance is given, as will be gathered from the following:—

- (a) In the siphon produces that forms at the site of the everted siphon, and may be a source of oxygen.
  - (b) Although the siphon may be everted siphonally, it leaves a small spot which is liable to drain later.
  - (c) In everted siphon it is the most frequent source of secondary haemorrhage.
  - (d) A potent cause of traumatic infection.
  - (e) Throbbings in the partial or complete, will produce a permanent lowering of the resistance to the siphon supplied by the vessel.
- Muscle waves of siphon siphonally follow according to the degree of throbbings.

III. *Worms* or *Artemia*. (a) *Artemia*.—From a everted siphon the most satisfactory results are obtained from limited longitudinal siphons. Transverse siphons give widely when more than one quarter of siphon is everted and when more than one half a change of rate of the vessel takes place.

(b) *Transverse Siphons*.—It is remarkable that vessels much smaller in volume than the bulb itself may exhibit the effect of everted siphon.

(c) *Complete Siphons*.—Very common in vessels incapable of much displacement or when they are everted in a state of comparative tension.

IV. *Worms* or *Artemia*.—Differ from worms of siphon mainly in comparison of the comparative intensity of their siphon and the small amount of secondary siphon between siphon and siphon. Also throbbings in siphon siphon.

V. *Artemia* or *Worms*. *Artemia*.—Many had spontaneously. When openings give an everted siphon is formed which usually commences with a terminal siphon. In some instances or incomplete siphon of the siphon there follows spontaneous throbbings, and the vessel is permanently everted. When a small and limited everted siphon is formed.

attached, but has no intimate connection with the vessel wall except at the point actually damaged. It therefore allows the flow of blood to resume and may finally be completely absorbed.

VI.—*WOUNDS OF WRISTS OR ELBOW JOINTS*. (a) *Hæmorrhage*.—Symptoms of Primary and Secondary Hæmorrhage also well known in need description.

#### TREATMENT OF PRIMARY HÆMORRHAGE

*Lacer.*—(1) Ligature bleeding vessels in an open wound as early as possible.

(2) When an exposed vessel is visible in an open wound ligature whether flowing or not.

(3) Treat a threatened vessel in a similar manner to avoid degree of secondary hæmorrhage.

(4) Endeavour to connect primarily with a large vessel which has been wounded in the course of a lacer traversing the body or limbs, if no signs of hæmorrhage are forthcoming, or if there are no indications that the vitality of the distal portion of the limb is being endangered, but wait treatment of traumatic hæmorrhage.

*Incised.*—(1) In addition and abundant primary hæmorrhage immediate blood transfusion is indicated.

(2) In less serious cases Erythra. given either solution may be tried, followed later by blood transfusion if necessary.

(3) In mild cases try administration of fluids by mouth: rumex, &c., followed by (4) and (5) if required.

#### TREATMENT OF SECONDARY HÆMORRHAGE

*Lacer.*—Direct ligature of the bleeding point is the only satisfactory procedure. Proximal ligature except for the gluteal and vesical arteries, is unreliable.

*Gravel.*—Immediate transfusion of blood provides the safest course.

(A) *Damage to Parts Supplied by the Squared Vessel*.—Short of death of the patient from hæmorrhage, delivery of the amount of blood furnished by a squared vessel to the peripheral circulation leads to varying degrees of loss of volume to the affected part, to lowered nutrition of the tissues supplied, or even to actual gangrene. The structures on the limb, which suffer most severely from primary hæmorrhage are the muscles.

(1) Frequency of hæmorrhage—volume loss of hæmorrhage estimated on 64 per cent. of subjects to great arterial vessels. From a practical point of view some difference exists in comparative importance of arterial and venous hæmorrhage. Arterial loss far more serious, as they tend to increase more rapidly on use and more liable to rupture, and, owing to formation, may have been incorporated in the wall of the vein.

VII.—*WOUNDS OF THUMB AND FOREARM*. BLOOD VESSELS.—(1) At Joint Blood Surgical Conference held in May 1912, it was concluded that

concomitant ligature of both artery and vein, when both vessels are wounded. Such is not common rule of gangrene. In point of fact such is demanded. Practised in gross veins when wound is limited to the artery, concomitant ligature of the vein is to be recommended.

(ii) In certain situations, more especially the thigh, when primary haemorrhage has been free, a temporary suture to tension the artery can be best employed with more success. Telford has designed a silver tube for this purpose.

(iii) Nature of haemorrhoids is however the only method by which ideal results can be obtained. This can only take place when there are no visible hopes of maintaining the vessel free from infection. The following cautions are not forth:—

- (a) Lateral wounds involving not more than one-third of the radius of the vessel are most suitable for nature. If more than one-third, then direct distal segment and attempt an end-to-end union.
- (b) Interposition of a vessel by employing flaps from the cut of an anastomosis is not recommended.
- (c) Very fine needles and 6000 Japanese silk give good results.
- (d) The vessel, ligated and prepared arteries are the most satisfactory for repair.

VIII.—TREATMENT OF ANASTOMOTIC FORMATION.—In the anastomotic stage direct ligature on either side of the arterial wound is indicated as:—

- (a) Continuous haemorrhage.
- (b) Rapid increase in size or diffusion of blood into surrounding area.
- (c) Obstruction of progressive distention of peripheral pulse.
- (d) Death of gangrene.
- (e) Pressure on neighbouring structures, i.e., veins, nerves, muscles.
- (f) Secondary haemorrhage on signs of extending infection of the healing structure.

Failing the above, no important attitude is preferable at this stage especially if vessel primary or secondary haemorrhage has occurred.

In Anastomotic Stage—Spontaneous consolidation is rare. Direct ligature of vessels is the method generally applicable to all cases. Prosthetic ligature is never performed unless unavoidable.

Direct ligature may be combined with tension of the vein, but should be avoided if extensive desiccation is required.

Where practicable nature of the wounds of the larger vessels should be considered as preferable in any other method.

Arterial anastomosis all requires careful intervention. This is mainly needed as a general rule in arterial vessel anastomosis, owing to vessel obstruction.

Anastomotic vessels may often be interrupted, and where requiring operation owing to pain, the union of the anastomotic opening through the laid-open vein is an easy and effective way.

The free treatment of ligatures of a large artery as a band calls for an much care and attention in the operative field. Immediately after the operation the band must be wrapped up in some cotton-wool. Anything which may interfere with the circulation, such as tight bandaging or splints is rapidly crushed. Warmth in the way of constant heat is supplied by hot-water bottles or electric lamps placed under the limb while it was largely owing to the lack of these precautions that the gangrene occurred as a preventable cause for ligature.

## REFERENCES

- BALLIE. "Anatomical Diagrams of Man in Low Blood-pressure." *Brit. Med. Assoc.* 1917, 11, 329.
- "The Circulation System." In *English Medical*. M.B.C. Exam. Report for 1920 No. 1, 102.
- BRIDGES. "Wounds in War." *British Medical* 1914.
- CLIFFORD. "Wounds in War." *Lancet* 1915, 1, 533.
- EVANS. "Wounds, Injuries to the Head and Neck." *John Wright and Sons*, 1914.
- JONES. "Injuries of Blood Vessels." *Medical Journal*. *Edinburgh* 1916, 1, 1109; 1917, 1, 1111 and 1112.
- "The Heart." *Monographs on Heart and Vessels*. M.B.C. Exam. Report for 1915.
- ROBERTSON, Sir LESLIE. "Ligation of the Right Internal Iliac Artery for the Treatment of Haemorrhage from the Bladder." *Lancet* 1916, 1, 150.
- "The Circulation in War." *Brit. Med. J.*
- WYSE. "Wounds and Arterial Wound Dressing." *Brit. Jour. Surg.* 1917, 1, 107.
- YOUNG. "Control of the English Army's Army Medical Services." *Brit. Med. J.*
- YOUNG, FRANK. "Ligation and Treatment of the Right Internal Iliac Artery for the Treatment of Haemorrhage from the Bladder." *Brit. Med. J.* 1916, 1, 151.

ENGLISH HOSPITAL PLANNING<sup>1</sup>

By Sir PETER ADAMS, F.R.S.

A REPORT on this subject was recently delivered by Sir H. Power Adams, F.R.S., before the Royal Institute of British Architects, at 9, Chandos Street, London, W.1 under the chairmanship of Sir S. R. Stainer, F.R.S., Vice-President of the Institute.

Mr Adams, after making some general introductory remarks and suggesting might be divided into seven distinct groups —

- (1) The Poor Law Infirmarys and other hospitals under civil control
- (2) The voluntary hospitals under Government control
- (3) The general voluntary hospitals, ranging from the large hospital with medical school attached to the small cottage hospital of a few beds
- (4) The voluntary hospitals for women
- (5) The voluntary hospitals for children, and
- (6) The voluntary hospitals for acute special diseases or ailments

<sup>1</sup> Reported by the last president of the Royal Institute of British Architects, and was delivered to Sir Cecil L. Wilson, B. Kensington (Ed. Carlton West) from the 1919-20 for the report of the Institute.



The position of the French hospital was very largely dependent on good planning and equipment. Hospital buildings were designed to meet in to maximum extent the requirements of ventilation, drainage and occupation in the case of sudden increase in personnel, and a varied treatment of each building. To some, the last thirty years' good progress had been made both in planning and in general architectural treatment. The buildings were more attractive, built and not although excellent results were not quite met in others. It was quite almost nothing was thought good enough even after, and the close depressing effects resulted.

There were a few of hospital committees in France hospital that did not exist twenty years ago. It seemed in the hospitals. Facilities were now in almost every hospital and included a few departments by radiography and therapeutic services, a subject treatment, surgery and clinical laboratories for chemical and pathological services.

All French hospitals were more largely dependent on King Edward VII Fund which with had large sums to be distributed among them, and plans had to be submitted and approved and amended as their experts demanded, and used such hospitals until, when their plans in the Ministry of Health for approval. Against the British Red Cross Society and the Hospital Association had agreed a future for advice and retention which would ultimately be at least in their planning and constructing hospitals. One would not when it still happen to many of the prominent voluntary hospitals if they were subject to the same criticism as that in America, where the College of Surgeons investigated hospitals and sent them to visit with hospital and govern the medical business and records, and gave out new, determined, and then issued a list of approved hospitals. Any not in the approved list when applying, the funds were in a bad position and the requirements suggested generally followed.

The Site—The ideal site was considered was on high ground and of large area, sunny, with plenty of trees to be seen, the view all very well as in a country. But requirements were in other and, even in the latter the site largely depended upon situation. For instance, St George's Hospital, London, had Hyde Park on the one side and the Green Park on the other, and therefore did not compare with an excellent site elsewhere. A gentle slope from north to south or south-east was desirable with good approach roads on the northern side and well sheltered by trees on an rising ground and away from noise and dust, with a wide belt of thick rock or gravel and with gas, water and drainage available.

Mr. Adams and he would like to suggest that a promoter of a hospital, wherever should consult the architect before the selection of a site as to the position and nature of the ground, as lack of facilities in drainage, water and lighting and other circumstances might add very largely to the cost of the building. There had been a tendency in recent years to move hospitals further out into the country, possibly the day would come when Lord Dunsley of Peter's reported proposals would make sense and all large

hospitals would be outside the town zone, with central cleaning, etc., for nurses and the out-patient departments in the town. The advantage to patients would be enormous, and the disadvantages would be the slight inconvenience to the medical administrative staff and the loss of parking places.

*Layout of the Buildings*—These had been considerable discussions recently as to the relative merits of what might be termed the horizontal and vertical types of planning hospitals. In America it was almost always the vertical, due largely to circumstances such as restricted sites, methods of construction, weather conditions and their financial resources. They were used to being in that many floors high with elevators and they depended largely on artificial ventilation especially in winter owing to the cold. Every hospital should have a maximum of light and air in every part, and American planning entirely ignored this.

In England, possibly because of weather, it had almost invariably been horizontal, and in Europe forty years ago after serious epidemics large hospitals were erected with one narrow block spread over large areas, and with the blocks entirely separated but occupying the hospitals for periods in disease we had not often gone to the extent that. The sites for such separate buildings were obviously more costly, and could only be justified if really important benefits were gained.

Unadmitted considerations of planning tended to ring, efficient and economical administration and the spreading of the horizontal planning might be avoided. At Newcastle Royal Infirmary the main corridor was over 300 yards long with wards on both sides and at King's College Hospital it was longer, but then at the latter all the wards were on the corridor only. These corridors were a bit too long and too narrow, and there arose the logical question why ward pavilions should not be more than three stories in height if properly planned so that the air from the lower ward was not prevented by the ward above by stairways or lifts and so long as the ward pavilions were sufficiently far from any other building that light and air were not impeded.

In this country for general hospitals it seemed a necessity to have several pavilions constituting the various buildings, and if vertical planning was adopted and the ward pavilions were of considerable height then, to prevent the stagnation of air in the recesses of the ward and above the ceiling line, the ventilating machines might be lower than the wards, and then have an open air space above them of some 4 ft. or 5 ft.

A few years ago it was the custom to have a good ventilated air space under the ground floor wards for a through air current. Since the war this seemed to have been largely displaced with, probably on account of cost when the King Edward VII Infirmary was erected at Millbank, the Advisory Committee suggested that the ward should be given to the ground then 5 ft., in the infirmary was possibly 4 ft. was sufficient, but, if too much space were left it was usually got filled in and reduced for three stories. At some of the advantages of vertical planning seemed as how to be—



There had been a tendency during the last few years to relieve the work of the general ward, owing to the desire for better administration of business and to add to the comfort of the patients, and, although the general wards were smaller in those of fifty years ago lately they had been reduced somewhat, and 24 ft. to 26 ft. seemed ample for a general ward, and certainly sufficient for a ward of day patients beds, if there was an amount of ventilation. The central ward seems seemed to have gone out of fashion (one of those a width of 41 ft. at least necessary) - this diminished width of the ward largely decreased the cost of the building. In addition to the general wards - it was usual now, and the tendency was increasing, to have only a ward of from one to four beds in each unit for special cases.

A separate unit of observation wards has everywhere been seen often provided and these should be near the dispensary entrance. The scheme being adopted was to have the internal walls of plate glass for easy inspection and under one especially ventilated. The head space for each bed should not be less than 7 ft. 6 in. centre to centre of beds, and rather more than this for emergency and special cases and a little less for children. On many plans of buildings necessary to place the beds in large wards at right angles to the windows which were usually on either side of the beds, but it was questionable whether this was the best position as the patients had to face the glass of the opposite windows and recently many hospitals had advocated the scheme largely adopted in America of placing directly parallel to the windows and not at right angles, so being the best position for the patients.

Concerning the plan a note was suggested to have by the late Mr John McE. Perry (then Chairman of Westminster Hospital) which, he thought, had many good points - was to divide a long ward of say twenty-patients into two sections with the sanitary system and bathroom centrally placed between them and with a wide gangway connecting the two sections each way, two or three beds each. The idea arose from the old wards of Westminster Hospital which had a maximum of eleven beds on each ward and beds arranged in groups of three. These formed one moving unit - an independent ward - frequented by patients and staff and certainly an more useful room although the experiment could not be quite so simple as shown.

A plan was designed by Mr. Hargrave some time ago which always depended on four (the scheme) as a very expensive method of maintaining a minimum of allowing good ventilation and a view of all beds, good lighting, a plentiful supply, and also classification of patients, it was shaped like this:- As it had not been tried it had never been built. A plan which brought provision for the new hospital at Newcastle was novel, the ward was 11 ft. 6 in. and contained twenty-four beds in sections of four - four continuous and with the beds put diagonally to the windows, the screens against the feet of the beds had the upper part of clear plate glass, the upper part and window could be good and the cost low as the ward was only 11 ft. 6 in. wide. Another advantage of this plan was the facility of heating

A window blind should be covered with a thin material, such as leather, or a thin muslin or cotton, placed inside the window and by the window, — a paneled blind should be covered with a material which complements the color of the walls, but if the blinds were parallel to the window the trouble was largely if not entirely overcome. It was necessary to cut slats so that there be no creases in the material and then supply fresh warm air to the walls, but these were found extremely disagreeable and were eventually shut in cold weather and when closed altogether. They consisted of frames which allowed the air to rush through as a cold draught and, to try and overcome this, he had one made which consisted of a glass window one plain a little larger than the other opening. It could be opened on a central screw pivot so that the glass revolved to a position of warmth or cold, acting as a buffer and being more or less warmed by its proximity to the radiator and the adjusted air diffused to about the area of the radiator. Such an inlet then should be lined with the most beautiful glass paper, or even of real enamel and made easily accessible for cleaning by lapped joints.

Another system of heating was by paper around the walls. They were cheaper than radiators and gave an equable temperature and were an extra defense to show that long radiators although there was perhaps a larger surface on which dust would accumulate. This also served to keep the beds away from the wall and showed the necessity of a covered floor filter.

Referring to a few details in connection with the general and Mr. Adams and the doors, where beds were all should be built both side and of hard wood either stained or varnished or painted. As to the windows, there were various opinions. Personally he favored the double hung mode hung with cloth and with a hopper light over and independent glass side shades, three lattice made with a movable pan to allow the hopper to pass by changing. The lower sash should have a deep bottom rail and three should be cut in slanting on the sill to allow of the lower sash being raised to about as in the working mode. There was, of course, the objection to a lowering the sash weights and cold frames with spring steel tapes had been used in order to overcome this. Other patterns such as the ladder and the Middlesex were largely used and also steel window of various patterns. Window frames should be of white-pine or maple or of hard wood heavily polished.

As to floor openings varied considerably. The American plan of a carpet of cement with rubber filling was very good. He thought it had a softness as hard as Parquet blocks as better still as a carpet on a finished oak floor. Other floor coverings often used were linoleum and rubber and had shown no success, and these were very expensive. Some like good ones should be between floor and walls, and it was an advantage to have a raised step behind the beds in order to keep them from the walls. For the finish of walls and ceilings a good enamel paint on hard plaster was best. With a coat in the angles.

If the patient was a poor devils with stains and vermin, there would be nothing so fastidious as well to supply. Various standards had been fixed for windows and door openings and so brass frames, powdered glass, painted iron, etc., polished and white metal, the latter, indeed, had been well and required very little cleaning. door handles should be steel and not brass. As to the sanitary adjuncts, there had probably been more discussion the planning of these than any other detail of a hospital. Thirty years ago they were almost always placed at the end of the ward away from the entrance or, especially in large wards of Poor Law institutions at the centre of the ward, they were invariably entered by way of a lobby arranged to be cross ventilated by having windows on either side. The last few years there was a tendency to have put in the other or entrance end of the ward in order to be under better control and not to obstruct the view and, as from the ward, also to simplify the plumbing, heating and drainage and to be available for the small subsidiary wards as well as the general ward. Another recent innovation was to limit the projection of these blocks beyond the general wall-face and by lowering the height of the ward and suit rooms containing the lobby over them, not, for though, a strange suggestion, but he did not think there could be any doubt that rule as to where the sanitary adjuncts should be placed, and there was much to be said for the old-fashioned towers at the ends of the wards with a large lobby between for patients, but he hoped we should not follow American planning as to the sanitary arrangements, for however up to date the change might be he was convinced that a ventilated lobby between them and the ward was an advantage. The water closets should be at least 5 ft. by 3 ft. 6 in. and have a 1 gal. flush system, which was better fixed directly behind the apparatus with a direct pipe to the pan, the door of the w.c. should always open outwards.

Mr. Adams then proceeded to describe in detail the planning and equipment of the following hospital accommodations: men's room, ward kitchen, small well-ventilated locker, changed room, small dressing room, ward room for use of register, linen store, patients' clothes store room, stores room for bed and table objects, etc., and bank service room, nurses' wash, dress, dry room, classroom for teaching nurses, etc., nurses' rooms, convalescent and infirmaries, out-patients' consultation, paying patients' stores, medicine, operating theatre department, waiting up room, dressing room, ante-room, room, chemical department, x-ray room, bath room, diagnostic department, venereal diseases department, admission of out-patients, out-patients' department, small operating theatre, dispensary, main refreshment hall, dispensary, sanitary department, post-mortem department, mortuary, new room, post-mortem room, laboratories, pathological laboratory, general store and preparation room, storehouse, etc., steward's department, kitchen department, laundry, vegetable, walking, larder, survey, laundry, linen room, nurses' home, medical school and drainage.

## THE EVACUATION OF SICK AND WOUNDED PERSONS

By DONALD THOMAS A. VAN DUSEN, MEDICAL COLLEGE, BOSTON

In the treatment of sick and wounded, no matter where, two distinct but equally important factors stand out—the clinical and the administrative. Both must always be carefully considered in order to comply with the two principal principles for success in the operations. The first of these is to attain a maximum speed compatible with efficiency, while the other is to provide the greatest measured comfort and safety of patients in the process. Each of attention to these points may conceivably be the means of saving lives unnecessarily. In any nothing of the solution of additional and available evidence.

The evacuation of sick and wounded by water presents all the difficulties encountered on land with the addition of those created by the sea. As the average landman is handicapped through lack of training and usage when making under marine conditions it would seem but logical that the water transport of wounded should be restricted by men familiar with the element.

Incidentally it may be mentioned that any organized form of water ambulance service may be called upon to deal with the illness of patients—batal, military (including official and other vehicles), and Air Force. The psychological reaction of the two latter groups to the suggested form of transportation, unless the it to be equivalent of it, is a main factor which should however not be lost sight of by those devoted for this duty. To the sailor this does not apply to much. He is back among his usual surroundings although under unusual circumstances. He therefore "grins and bears it" without worrying too much about "why and wherefore."

It must be clearly recognized that the actual transport of patients by water is at all times governed by local and weather conditions which vary very considerably. Therefore, instead of considering different available methods, it is not possible to lay down any particular one for uniform use. Moreover actual events in which service are, numerous for operating plans are suggested and personally selected during peace time maneuvers. Hence in all departments, governmental and should include one or more alternative schemes capable of being brought into immediate action of the original plan whenever.

For this reason it is essential that the officers appointed for medical transport duty should be carefully selected. They should be men of ready resource capable of dealing with unusual or unexpected circumstances as

<sup>1</sup> Read at the Fifth International Congress of Military Medicine and Pharmacy, London, 1929.





beings lowered to water, as passengers. The most practical arrangement of personnel and work must be planned long before the ship is completed, and the following might possibly be added to a code of marine transportation rules.

1. In open waters, boats (they will probably be used) in the hospital ship should have one man at each bow for out and another man. Two persons of extra weight should be arranged to facilitate landing. For this work, public boats are very useful, as these operators and public boats provide good landing and discharging facilities.

The method of handling of materials for most hospital ship work, including those can be provided during peace. This has to be supplied by sufficient steps of the first type boat, rapidly converted into hospital ships and maintenance stations. The latter should be fully equipped under the Geneva Convention and then retained after the modification to the extent to the minimum, authorized by the Red Cross. Strictly speaking, however, the point is outside the medical department.

When ships, boats and men, the method of handling them depends upon the facilities which, if not actually in existence, will have to be improved for loading, unloading a boat or the contents of one more, two being detailed as "boat-handlers." As boat after the boat, upon the lower and the other on the stern. The other two, who should be men of variable strength, are told off as "handlers" to take delivery of the net or stretcher from the shore hoisting party. At the appropriate moment as directed by the men on the shore shore, using as commands and to change the leaders in the center of the boat take the man over, laying it across the deck close to the side of the boat away from the pier. They then, step across as mechanics for the net, and so on until the boat is loaded.

A second order of ships, lifeboats will make two Naval services can be loaded and left and two detailed as the military stretchers three detailed. When the boat is loaded the "handlers" serve a second crew in readiness for unloading, while the "boat handlers" remain at their stations. The boat is then taken to her destination, usually with several others by a mechanically propelled craft. If this be another gun then the boat is released in a similar manner. But if so, it is more likely the men are engaged in a hospital ship or other vessel then Naval one should be handled as follows. The receiving ship provides a watch and derrick with a single 10 ft wire rope having a hook at its free end. On to this a bundle of rope or wire 7 ft long for each person and also having a hook at its free end, is hoisted. The bundle ropes are kept apart by means of a wooden spreader, 6 ft long and heavily fixed at each end above the bundle hooks. To each end of the spreader a light having been attached to act as a guide rope during hoisting. The end is hooked on to the bundle and slowly hoisted on board where it is released by the ship's hoistman going on reaching the deck. It is unhooked and the bundle lowered for the next man.

Military stretchers present more difficulty to transfer. They are best handled by means of a carrier sling designed by Lieutenant Colonel

Diagram 11341, for most the Boardman. It is made of 1/2 in. A piece of stout canvas, 12 ft. by 12 ft., is laid out flat and a stretcher placed on the center along its narrower dimension. When the four stretchers have come, a hole slightly larger is cut out of the canvas and bound with canvas. The canvas projecting from each side of the stretcher is then cut into an approximate triangular shape, the whole being bound round with one inch rope. Each of the apex of each triangle contains a knot in one ring. The canvas at the ends of the stretcher is now cut and bound to a shape which will engage the lateral flaps when approximated at their apex. It is made fast to them by a metal hook in each free corner which has been so expertly placed in the side flaps. Thus the present and finished net is enclosed in a canvas trough, protected from the wind and in no danger of falling out. For use, the thing is spread out flat and the stretcher, with its four feet protruding through the holes in laid on it. The lateral flaps are hooked on to the wash over by the ring and bound fast. The side flaps are next hooked to the side net and everything is ready for hoisting. Light guy ropes are fixed to the handles of the stretcher nearest the flaps side by a close bitt as a running room. Special attention is kept on them to prevent the thing taking an unexpected while being hoisted up. On reaching the deck level it is hooked inward, the guy ropes being stopped off and thrown down to the boat for use with the next case.

With small boats some difficulty is saving the ding a mat with every bit half of working room. This is overcome by placing it, with end and side flaps, rolled up, under the last stretcher embedded in the boat with its feet in position in the ding. On arrival at destination all that is required is to hook on and hoist up. The natural tendency of the ding to tilt must be overcome by the guy ropes at the other end, the whole being kept as level as possible.

The ding can be used for survival and was found most handy at the Boardman. Several should figure in every hospital ship's equipment. While one case is being hoisted, the crew can be prepared and ready when called. In such a service, where a machine has been established, the average time from loading on a ding to its completion on board was about five minutes—five feet, according to the forehead of the receiving ship. When the machine is made from a lighter or other craft with ample deck space much time can be saved by using two opposite-deck and working parties. On board the *Albatross* at Manila this resulted in saving space, being deck with a short thirty-five minutes. Needless to state, steady watchmen are a must and the hoisting guy ropes should have average horsepower, and pulling power. The command of the boat or craft should be placed in charge of one of hoisting operations, as he is in a better position to judge the natural moment.

For unobstructed stretchers or cots a simple way is to hook the boat over a ring then fix to a part of the stern ring; the boat falls and hook both up.

quarters. The handles are fixed and level the water when the bird is depressed and pulled. The handles are adapted in length, shape—flexible construction, to meeting the required and varied or bowed forms during use.

While there is little doubt advantages of the device as special means for general use, a net tray is the superior. Briefly, it consists of a hollow iron 2 ft long, 8 ft 6 in wide and 1 ft 6 in deep in to which are attached various To facilitate handling, the end pieces are hinged to let down, being kept in position by levers and pins fixed to the sides of the tray. They are also suitably shaped to take the handle of a stretcher. At each corner, four slaps of appropriate length and strength converging at a central ring are fixed and the application is complete. The trunk may be hooked into the ring. The guy ropes for this tray should be kept permanently attached at both ends of one side, being coiled up inside when not in use. The tray should be hooked on to that the guy ropes are on the side next to the slaps. This gives greater control in preventing it from jumping during lowering.

The advantages of the tray are that it is solid, giving the patient a feeling of security while in motion; the depth allowing the view of anything left the tray. It can be used equally for men or stretchers and even for man and horse. Owing to its construction it is very suitable for reaching over directly from a loaded slaps boat. The Fudinar sling or handle is much better. All hospital slaps and ambulance carriers should be supplied with several trays for general use as well as a Fudinar sling and handle for those occasions on which a tray is not suitable.

The constant use of men and stretchers makes an important point. It is obvious that such horses—Navy Army and Air Force—must have appliances specially designed to meet various unusual needs in various circumstances, but not necessarily in all. During such may be used the stretcher. Apart from individual instances previous to death, every horse requires an ambulance for the transport of general of its work and wounded. It should, therefore, not be difficult to design a stretcher for general use in all cases.

A standard stretcher could be made as follows. To the ends and sides of an ordinary army stretcher canvas slaps are fixed. These at the head and foot are 9 in wide, while those along the sides measure 18 in. The end and side pieces are hooked together by lashing as required. The lashing is kept permanently fastened to each stretcher handle and is part of the appliance. Brass eyelets are let into the slaps. By this means the whole formation of a stretcher is supported by the two stretcher poles, while the canvas slaps are added to the Army stretcher. When not required the slaps can be laid flat on the stretcher before the patient is put on it. To enable this appliance to be changed a handle converging to a central ring is permanently fastened to the head and foot and with a rope and pulley and two blocks complete the appliance. Concerning the canvas could be cut out of one piece the stretcher poles being run through a loop made in it, as shown in the Naval service stretcher. The central cross piece or spreader would be hinged in order of lifting for moving purposes.

The advantages of such an apparatus will be more readily seen if a comparison of the dragging points of ordinary spinal casts which are in use is made. —

(1) The Army stretcher is narrower and less cumbersome than a Naval one.

(2) The Army stretcher only requires two bearers, while the Naval one calls for four.

(3) The Army stretcher can be placed on the ground resting on its (a) feet and (b) legs. The compass chest of wood, &c., which on the Naval one elevates the patient and picks up his weight on the ground is not so.

(4) It is not constructed as Army stretchers are, but along with it a temporary sling being prepared, a Naval one can

(5) be used as a stretcher on only three ambulances and, on a small Naval one will get on only an ordinary ambulance.

(6) A sling stretcher is not nearly so comfortable for the patient as the metal Naval one, especially if occupied for any length of time.

Consequently it could be either discarded or abandoned, or the two may be used in the positions described above. It would also have the added advantages of interchangeability and then do away with the necessity of transferring the patient to the patient.

During 1915 the Navy adopted the system whereby a sick or wounded man is placed on a "litter" boat, i.e., ship. He will be not travelled together to the Base Hospital without further transfer than directly into the litter (shown). This has on the transport chain—ambulances, trains and hospital boats, is a most ideal as the carrying capacity with empty chairs can which will give an exchange for an equivalent number of loaded ambulances to a tender. Thus, leaving any other shipping necessary, each man is a patient fully ready for further service immediately after the completion of his particular one. The base hospital obtained the man as well as kept up the supply of clean cots which a platform throughout the whole transport system to the ship at sea, and from eventually returned to the base with a patient. After changing the cots was removed.

By this system of moving of patients after being placed in a cot was needed until actually put to bed on the ward. Through a method of exchange with control houses in the ambulances from all piling and jacking was eliminated during transit and the train could discharge 120 cots on a single occasion leaving the base clear for other traffic. The many stretcher transfer between casualty clearing stations and base hospital were avoided and the number of patients greatly added to in consequence.

Although not strictly part of the subject under review, this point of a standard standard for covered and other services can have been considered as largely owing to its manifold advantages. The objection to it may be interpreted as being both theoretical and practical in nature. The former may be summed up as service system and usage while the latter

control is not from the front of the machine, support the shoulders the machine is constructed to carry on the gun platform is a matter of design. The machine should not be designed to obstruct. While from the front, while in the shoulder, and in the center for all services and then pointed so to speak, it would require good use of a single master of service exchange. All further supply required would be carried from a common main depot to the parts outside being needed. Thus, it is true, would not for large reserve stocks but probably not as better than of the separate reserves contained. The cost of which when studied up would most likely exceed that of a standard supply for all the armed forces. The same principle could also be applied to many other kinds of equipment, greatly to the benefit of the public, primary and without loss of efficiency.

To avoid undue waste of public money, initiated by the machine is supposed of existing separate service stocks if the suggestion of a standard machine for all services is adopted then some provision has been agreed upon it should be made to replace and then gradually brought into service as all necessary, common. In the meanwhile, service supplies would be in process of manufacture. A common amount of what might be termed typical service equipment would however still be needed in each branch or accordance with its own special requirements in knowledge.

Mechanics may have made of the shoulder being, has come derived by the late Fleet Surgeon Med. Robertus E. N. and adopted already in the British Royal Navy. Briefly it consists of seven steps method as intervals with steps of split lengths of suitable size which are firmly secured in it. The steps are cut to fit round the patient being applied acted by opposing straps and buckles. At the head and foot are bands with a metal ring at the end. At the inside are two straps, which buckle across the patient to each shoulder girth and so prevent him slipping down when the shoulder is held or being restrained. Hence the steps are buckled together the shoulder can be moved in any position without injury to the patient.

While speaking, the term shoulder is a misnomer. A split of an anatomy the whole body in the nature of French anatomy is a more accurate description of the apparatus. Its advantages are lightness and compactness in carrying, ease of application and removal, displacement, the latter being, far more than that of the patient. This is a very great factor in naval service where allways are often narrow and confined. Also the ability of handling it in the most position makes it especially suitable for lowering, raising through masts and small boats where no perfect safety and comfort.

The drawbacks of the apparatus are two. The first and a very minor one is that of standard use. This could be overcome by having several more or better still in embodying the required by means of adjustable extension pieces. The most important drawback is its use in cases of respiratory embarrassment, such as pneumonia, diphtheria, tetanus, etc. In

these cases as the patient is so strapped in, forced inspiration is almost impossible. On the rare occasions—and for which it was never intended—when it has to be used for cases of this type, the chest straps should only be fastened at the last moment and released at the earliest opportunity "bait" the advent of gas without a modification of the existing model is provided for patients breathing gas masks.

Beyond these objections, the difficulties related to the Naval use. It is, in fact, one of those special appliances already referred to and quite indispensable for ships. During the war it was also found very useful for minor treatment in France and Gallipoli.

For more comfort and safety for patients in transfer is obtained when this can be effected by means of connecting gangways between transport units instead of by a hoisting process. The latter is bound to involve an element of handling as even the most perfect. It should, therefore, be recalled as much as possible quite apart from risk of an accident and possibly even its hoisting against the existing ships side while suspended in mid air.

Greater facilities permitting it is generally possible and more desirable to by ships alongside each other and transfer patients directly by means of gangways. This means much saving of time and space on the water to patients. As no more than transfer from one hospital ward to another. During the Gallipoli campaign, on several occasions in Medea between the Apollonia and Marmorata, then using as regular hospital ships, had four smaller coastal dinghies, two on each side and connected by gangways. By this means Apollonia could evacuate over 4,000 cases—wounded and walking—in twenty six hours with practically no incident to them.

This system was initiated and developed by the Royal Naval Medical Service when on change of the sea transport of all sick and wounded from the Gallipoli area between August and November 1915. It was directly due to two factors. The base hospitals of Egypt and Malta were congested with casualties for further service who required operations, and the second factor was the arrival on the Mediterranean as hospital ships of the Apollonia and Marmorata. Their complement was 4,000 and 3,500 respectively. Medea was the only port in the area considered suitable for them. As these numbers of permanently sick cases could never have been obtained from the Maltese hospital, alone for any one homeward sailing of these large ships all cases of the type on Alexandria and Malta were brought to Medea as the largest ships attached to the Mediterranean Force as they were returning empty there for further service duty all the Gallipoli hospital. This allowed detaching special ships for their reconversion to England direct, and incidentally saved long the use of these ships for a period of six weeks or more, especially in a time when all available ships were urgently required for duty at sea.

It was evident that the resources of Medea—where many of every

disappointing just to be met by one of twenty (1) and that (consequently) the third class passengers in similar cases going to hospital were lost by this procedure. An earlier consideration of this matter was suggested by the writer, suggesting that (disappointing) hospital ships were fitted to, say, six days. The arrival of the hospital ships, the month and that of the big ships so that no delay would occur. The first month of this was then re-arranged to England in three or four days, just including their transit time to making them of one day from Alexandria or Malta. Furthermore, they travelled in ships of 45,000 and 50,000 tons, instead of an average of 1,000, with much greater comfort. Also the large ships were fitted almost in capacity on each trip to England and vice versa arrangements was made.

This process of laying ships alongside one another, even under favourable weather conditions, created considerable delay at first on the part of the Hospital Ship Management in command of them. They raised various objections which were overruled by Naval authority. The most general of these was on the score of the ships' stability, always kept every way ready for normal use in case of need. This objection was met by showing the boats to be strong without during the operation. Another point was the possibility of ships bumping each other while coming or lying alongside them and further damaged the risk. The only device for which a valid reason certainly existed was in odd cases of overlapping propellers. Such did obtain in a few particular pairs of ships ordered to carry the evolution out. In these instances the routine was naturally not relaxed.

It does not require a skilled seaman to gauge conditions, more or less accurately regarding the feasibility of laying ships alongside each other. The actual process is, of course, a matter for their respective commanders and not the Medical Transport Officer. The blame for any accident is not his, but attaches to the captain concerned. As professional seamen the problem is for them to solve. Having been successfully performed in the past, it is, therefore, capable of repetition when future serious demands are already stated, weather and local conditions must always be the deciding factor in attempting direct transfer from ship to ship. But from the medical transport point of view, it is clear for supplying with the two main possibilities of all ambulance work. The part of the subject has been dealt with somewhat fully because the incidents quoted naturally occurred in the past and will, no doubt recur in the future unless the utmost in change of medical transport is made of the possibility and control upon the performance of the evolution, subject always, of course, to weather conditions.

In view of the advantages of concentrating gangways over landing operations all hospital ships both at sea, or others over subsequently in port, should be fitted with one or more entry ports on each side. In this they should be not less than 6 feet 6 inches in width and extend from deck to deck. One set should be on the deck nearest to the

stairways and every deck fitted for the accommodation of patients should be made up into both sides with sufficient space reserved to allow of emergency being conveniently handled when required on board.

The fitting of Naval hospitals in the suggestion on the ground of possibilities in any of the ships who can be anticipated by water, through the main gun, the ship, placed in emergency then. This already obtained in the hospital ship, which has one or more main gun on each side. In emergency, hospital ships building which are likely to be taken over by hospital ship personnel in the event of war the Government department responsible for planning should require them to be so fitted up, otherwise only only will be hospital ship-own crew personnel of them.

There is a hospital ship in which one corner, stateroom and cot should be placed on one side, large, carriage, fitted with rubber or pneumatic tires, being a hospital ship always in the general comparison or left with the ship and gun on the left. This ship then and also getting at points in the future is a square with a house party. A number of this, large, should be supplied to every hospital ship and ambulance service.

Throughout this paper, hospital ship service in hospital ships and under hospital ships, has been made. A few words on the difference between the two types of ship may not be out of place. Hospital ships, in the main, require the ship, fitted for the purpose of being an floating ambulance hospital, and are equipped with all the appliances to be found in hospital ships. The no more of these is usually to be found in the list of auxiliary ships provided to every fighting fleet, namely the repair ships, depot ships, etc. On the contrary of war the paper is added to according to the requirements by the conversion of war ships down from the fleet, the service and fitted up for the ship. On the other hand, ambulance ships, as we see a rule permanent ones of a fleet, and are obtained from the private ship class of the Mercantile Marine on the outbreak of war time. These ships are used as medical transports for the carriage of and care of sick. Which, equipped with a certain amount of medical transport equipment, they are not fitted out on the same one side as in hospital ships.

Coming from the hospital and perhaps outside the mercantile ship class, perhaps, the consideration of the possibility in future instances of medical, naval and military operations—military, then the Air Force must establish a water transport service for medical in all branches of the Air Force. This would be organized and operated by the Naval Medical Service, the land transport of sick and wounded being obtained in the British Medical authorities. Cases requiring transport by air would naturally be dealt with by the Air Force Service.

The next aspect concerned medical and perhaps personnel, but with a view to a special reference in the transport of medical in standard



medical personnel is if not forward as a constructive suggestion for improvement in practicability. A further and possibly beneficial development of this idea would consist in the establishment of an independent medical service prepared to transport casualties by air, land or water, as the case might be. Precedent for this exists in the establishment of the Royal Army Medical Corps and Royal Army Service Corps to supersede the old system of regimental officers for these duties. Custom has had but limited a system but not hitherto stated is no valid reason for not considering its possibilities and giving it a real trial for and unbiased deliberation.

Apart from the administrative side there is the clinical one, which is equally important for success in the transport of wounded by water. Briefly, as already mentioned, it is summed up in providing the maximum comfort during transit compatible with speed. This includes the alternative as far as possible of pain, hunger or thirst, heat or cold. Under various conditions, surveillance to patients from heat or other pains should be guarded against by suitable means. The sedative effect of tobacco should also be borne in mind and a supply of matches and cigarettes provided. At the same time, the advisability of smoking for cases of gas poisoning is a factor to be considered, and should be regulated by the Medical Transport Officer.

In the intermediate stage of transport between shore and ship there is one more which can be done. With regard to pain increasing a tight bandage or dressing will often cause wounds, but the main point is the use or withholding of morphine. Where a medical officer takes care of the transport party this difficulty is diminished, but in the absence of one morphine must very well be given by a well informed or medical orderly. Nevertheless I am convinced that more lives than others have been lost from unskilful shock than by the administration of morphine. Some an object is to let the body work as best as it can, or almost should figure in every medical order in addition to but not in lieu of morphine.

Under active service conditions morphine is best given in solution by a "Wiley's syringe" or a "bolus", the latter being really intended for use. The cost of the latter has elsewhere not however is a serious drawback. Doses of morphine put up in gelatine perforated like empty paper which can be torn off as required may be used in such situations but on the troops the gelatine is liable to tear. In this form therefore it is not suitable for general use, quite apart from any question of its efficacy when given by the mouth which appears to be a matter of controversy and definitely discounted in the late war. Whenever morphine is given the time and loss should be mentioned on the patient's label.

Each intermediate transport unit—such lighter, A.—should carry a plentiful supply of fresh water to which has been added the proportion of one to twenty has been added. This contains very good Borden granules "stimulants" such as hot coffee and cocoa should be stored as thermos flasks.

long the same, in order to maintain the standard of living. The supply of food should be increased by the hospital ship as a rule. Tarpaulins and a few blankets should be carried on board in case of need for protection against the weather. Here, however, it is always easy to provide in every instance. Within the limited time between these and other ships of any duration, these points become, of the more important and need to be duly regarded and provided for.

In so far as the third stage of hospital ship work is concerned, the medical treatment of patients has been a matter of hospital ship routine and administration, and now with this a new era beyond the one ending covered this paper. There is still a great subject in itself and one of the best ways for dealing fully a statement with it. There are two points to note, which should always be borne in mind by every medical officer on hospital ships. Firstly, a great deal of work has to be done in the way of general or other surgery, generally being a kind of open-air ritual as it were, finally, and possibly the most important of all, the management of the hospitals of tropical countries. There have on the subject of these subjects numerous studies or books, the most full, though not perfect, and so rapidly growing, history of the post-operative diseases and their treatment and prophylaxis is given. The medical officer is left of these things, that makes up in the end a considerable part of his work. It also means, that the day is completely up to the surgeon's hands by patients with complications and often a death.

Another thing which points to that of locally accompanying operations on hospital ships. The study that is really against the former is the study regarding the management of health conditions under the protection of the Red Cross flag, especially in the long line and sometimes the ship with men for the month's longest summer in the tropics has been that local, particularly the management of the requirements of the sick. Notwithstanding the progress of the study which may be made, the present should never be forgotten.

A criticism of the Green Cross, in this, is completely justified by both nations on our own. Some of these criticisms would appear to be different. Others mean the result of ignorance of its terms on the part of its operators. If the Red Cross is to stand for anything, then too much criticism must be given to strictly observing the regulations governing it.

#### CONCLUSIONS

Two points are essential in the removal of sick and wounded—

(1) To obtain the maximum speed compatible with efficiency.

(2) To provide the greatest comfort and safety for patients.

One does not ask equally important factors enter into them—the administration of the ship.

It also happens to be usually subject to local and weather conditions, so that it is impossible to lay down any fixed routine for general use. The

general procedure may be divided into three stages—(a) analgesia, (b) anaesthesia and debilitation. The means may range from drugs, hypodermic or other stimulations, specially constructed hospital beds and to the use of substances, currents and hospital drugs.

There are three methods of transferring cases by lifting. The general purpose of the first is a wooden cot tray. This is a hollow box suspended by two straps and hooked on to a single full width wire running through in the receiving stage. It can be used for one, absolute or relative cases.

The second one is a bed in a wooden open box 4 ft. long, 18 in. high, being hooked on to it and hooked up. This is useful where drugs have no effect on the patient when up and down.

Military stretchers are best made up by the narrow sling designed by General Sir Penhryn, R.A.M.C. during the Boer campaign. This one enclosed in a strong tough material is on the surface and a firm cord of lifting out.

For combined operations, a standard stretcher would do very well, giving debilitation and anaesthesia. The second system mentioned above, the one applicable to all cases. By a patient and removed together from the first stage to the last hospital ward in their location transfer. Each bed in the hospital ward has its complete set of three, empty and on stand form which are exchanged for loaded ones and then they are always ready. In these stretchers would be drug from the end and some might be used in the much smaller. General of they would be transferred to another room, removing the patient from caring time and suffering. In the same room an equivalent number of cases only, they can proceed without delay, without really taking up the time.

Spirit appliances, such as the first Redcross stretcher, would still be supplied but on reduced quantities.

The third method of transfer is by grasping connections between the neck connected which is not more than an emergency hospital. In any case and down the narrow line in the patient in looking in the air may do. Hospital stage should have only, parts on each side of the bed fitted for patients, except if not being provided for handling stretchers in several hospital stage, looking and others likely to be used as each should have, these parts and no stage should be employed unless so fitted. Rubber wheel on wheel, legs on which stretchers are wheeled instead of carried should be supplied in all stages.

From the clinical side pain, hunger or thirst, heat or cold need to be attended to and other pains must be prevented. The relief of heat of patients should be attended to, although the patient is not necessarily attended.

For pain, hunger, light, darkness may either, but the use of morphine is important. While an administration cannot be left to the discretion of unqualified persons, I am convinced that some time since when have been less through unqualified than through morphine. *Acetylsalicylic acid* should figure in every medical case as well as morphine. Whenever used care and time should be used on the patient's body.

Every man—boats, lighters, etc., should have ample supplies of fire fuel and water, hot coffee and food should be carried on storage racks, being removed by the hospital ship as required. Tarpaulins and blankets should also be carried. Where known time is long, these points become all the more important.

Final cooperation in the land is a matter of hospital ship routine, a special signal is sent, which should be dealt with by officers detailed and trained for this service.

Fewly injured cases generally have leading apparatus, immobilized by wires. Unless contraindicated, Senior Medical Officers of hospital ships should see that their factory-made apparatus is the accustomed means to keep men from regaining the water. Patients should not be allowed to accompany shore parties on hospital ships. This is strictly against the Geneva Convention. If the Red Cross is to stand for anything, too much attention cannot be paid to observing the regulations governing its use, thus creating confusion, both past and present.

#### AN ADJUSTABLE WALKING CALIPER SPLINT

By BENJAMIN GREENMAN, F. C. S. (1933/34)

In a small hospital often considerable difficulty is encountered in obtaining a mechanical appliance when it is needed on a hurry. Such has been my experience with regard to a walking caliper splint until now, or, up to when an adjustable pattern was designed for me by O. E. B. A. Williams, John Sharp (diagram 1). I have never seen a similar instrument, and have found it very useful. Instead of having one of these splints in stock it was not unusual to find that by the time the patient received his splint, carefully made to measure, he was walking out of the hospital, unaccompanied by any restraining apparatus.

The mechanism of the adjustable walking caliper splint was similar to that of an ordinary walking caliper: the base of the splint is a Thomas type splint in which the weight of the body is transferred directly through the pelvic triangles, via a padded rug and two steel bars, to the heels of the foot. These ends of steel bars are kept in stock for gross variations in the size of patients, the fine adjustments being obtained through a screw thread on the terminal three inches of the steel bars by means of which the adjustable foot can be raised or lowered a few inches. The bottom part of the adjustable foot is made of a standard shape, so that it readily fits on to the heels of both of a Thomas patient (vide diagram). Obviously one splint can be made to fit either leg, by reversing the foot-plate and strap.

This splint has proved of value in the following conditions. —

(1) Fracture of the internal talseusity of the tibia associated with traumatic synovitis of the knee joint in a heavy mare of over 14 stone

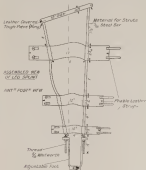


FIGURE 2

(2) Fracture of the patella (three cases). Of these two were treated with and one as a stilt-standing fracture with a partial rupture of the ligament.

(3) Fracture of the lateral talseusity (one case)

(4) Fracture of the Gluteal muscle (one case)

The only closed fractures noted were the following. —

(c) A 20-ton steel reinforced steel post, 10 ft. 11 in. adjustable in length, fitted with a permanent screw. This set out some of the level of the form projected below the ground.

(d) Owing to the weight of the adjustable foot, it was found that the steel side bars of the splint tended to knock off at the top of the threaded

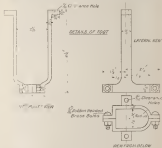


FIGURE 1

post. Steel bars to hold the adjustable foot has been made of steel 10 ft. 11 in. long instead of steel 10 ft. 11 in. (weight 1 lb. 54 oz.) the bars were strengthened the splint.

From contact to Surgeon Captain W. W. King for permission to publish (March 1911) and to Chief Electrical Attention Edwin P. Young for proof of the design.

# CASE OF ENLARGED SPLEEN WITH DELIRIOUS SYMPTOMS.

By SAMUEL LAURENCE, M. D. OF BOSTON.

A B, aged 21, reported as the only son of Thomas L. of Falmouth, Me., and the complaining of severe pain below the ribs.

History.—He stated that at 12.30 when a black, indomitable storm is fast a sudden attack of severe pain below the ribs was felt, the first being that passed off in ten minutes, after which another occurred. The pain still and continued with the back, sides, sometimes taking on the others, and moved up inside the epigastrium, having its paroxysms at intervals. While resting away from the storm, he began to feel pain in the breast, but it did not prevent him going down to the beach, and was on starting to get out of his coat, and he was taken, as he thought, again.

The pain was a continuous ache with severe spasms, the paroxysms. He had never before had similar pain, and had never within a year, during rain, his bowels were regular and had been open that morning. He stated that he had had no sleep, and was unable to return to his work, or to his studies.

Examination.—Temperature 98° F. Pulse strong, rapid, loose, spaces of pain. Marked tenderness and distress of the sides.

The apparent locality except the slight extension of the legs. There was not severe tenderness but on lying down the pain very severe in the left side of the abdomen and lower chest, and was more complained of when walking, nature in the left shoulder. It was especially in the upper part, coming on about every three minutes, and in doing the patient a little, the agony and severe relief by walking up.

The abdomen moved partly with respiration, but was not rigid, and was quite soft on palpation except during spasms when rigidity was more marked on the left side. There was complaint of an pressure in the left upper quadrant of the abdomen and continued up the left side of the chest to the left shoulder. There was no distress in pericardium. Urine was passed and was normal on examination. Heart and lungs normal.

In view of the fact that the man was able to sit and stand in complete ease and comfort, and the absence of any history of injury, or indigestion, it was decided to adopt palliative measures for the time. He was put to bed and was given opium and put to bed at 1.30, and the temperature and pulse recorded hourly.

At 3.10 he was sleeping and was reported to be comfortable. Temperature 98.0° next day February 12. The patient appeared very ill with pallor of the mucous membranes and cyanosis of the lips. He stated he felt more comfortable but still complained of pain below the ribs, and in the left shoulder. Pulse strong and very weak, much dry.

TABLE I.—RESULTS OF SURGICAL TREATMENT

For Splenic	Case	Age	Sex	Results	
				Survival	Follow-up
Trauma	1	25	M	1	14
	2	25	M	1	10
	3	25	M	1	100
	4	25	M	1	100
Non-trauma	5	25	M	1	100
	6	25	M	1	100
Total				5	140

The abdominal wound appeared distended particularly in the flanks, and was held tight. On palpation there was great tenderness in the left side extending up to the shoulder and dorsum to periumbilic in both flanks.

Incisions were open and urine was passed, both being normal. The man was immediately transferred to the military hospital, Oshkosh.

Operation.—The abdomen was opened at 11:00 by Major McVicker, R.A.M.C. with the patient under ether anesthesia. A midline incision was made and the peritoneal cavity was found to be full of blood and blood clot. A diagnosis of ruptured spleen was made and the incision was extended horizontally across the left rectus abdominis from the upper end of the first rib cage. On exposing the spleen blood could be seen spurting from the region of the hilum. The pedicle of the organ was clamped and the spleen removed; all traces of blood were washed from the peritoneal cavity and the abdomen closed in layers. During the operation 2 pints of normal saline were transfused into the left median basilic vein and 1 pint into the abdominal cavity.

The patient made an unremarkable recovery and returned to the ship to transfer to Raphel on March 21. It was now discovered that ten days previous to the onset of symptoms, the man had fallen out of his hammock—the fall was confirmed by another witness. At the time of the fall he struck his left side on a projecting ledge, causing considerable pain which passed off after about ten minutes' resting. That this was the causal injury appears indisputable.

The splenic examination showed a laceration 4 or 5 cm long and 1 cm deep posterior to the hilum. The probable cause of rupture was a rupture of the splenic tissue at the time of injury without rupture of the capsule, and finally ten days later the bursting of the capsule due to some undue strain.

Two types of splenic rupture are recognized after injury. Acute, when symptoms follow immediately and subacute when symptoms do not appear for days, or weeks after the original injury.

The constant signs of splenic rupture are: abdominal rigidity, local tenderness, dullness, signs of fluid in the right flank and costal tenderness in the left flank and Arter's sign of pain referred to the left shoulder—in the recorded case a most constant and marked symptom. The state of the pulse may afford a constant sign of intra-abdominal hemorrhage and Gordon Watson [1] states that "in rupture of the spleen the pulse fluctuates in volume as it increases in rate until it becomes



remained left upper quadrant, and Hans [18] (1910) [1] says it is 'often the diagnosis of metastasis is clearly resolved but is only proven there - after oblique of the greatest diagnosis, enter.

Factor and Taylor [7] describe a case of injury to the spleen with delayed haemorrhage in which a man was conveyed to his home twelve miles away after a motor-cycle accident, and after the man awoken walked several hundred yards to his doctor for examination—four days later the doctor was summoned and found his patient collapsed with a pulse of 120 and temperature 104° F. He was conveyed to hospital but walked into the cab and from the cab to the work, and not till two days later was the abdomen opened and a ruptured spleen removed.

Jackson [4] reports the case of a girl, aged 16, sitting in the 'peritonaeum', when she had sudden pain in the lower part of the abdomen. She was conveyed to hospital and a ruptured spleen treated at operation. After recovery she stated that twenty-eight days previously while playing at school she was thrown against a desk, striking her left side—she had been going to school and doing house work as usual in the intervening days. Pathological examination of the removed spleen showed that it had been opened at the original accident.

Hamden Bailey [2] records the case of a man who walked to hospital after being hit on the abdomen with a pole and walked home—she felt well and did not return for five days when a ruptured spleen was diagnosed. Differential diagnosis after injury to the abdomen includes rupture of the kidney (this is usually made apparent by the haematuria but Dunn [3] records a case of left-sided retro-peritoneal injury following a motor-cycle accident in which the patient had haematuria which began after several minutes proved to be traumatic haematuria associated with a ruptured spleen.

There is the datum of Butler and Carlson [5] who state 'that in all patients in whom there is a history of trauma to the abdomen to the flank or to the lower chest area if there is no visible injury or local evidence of injury, we must always be alert and not overlook the slowly-developing, deep, the acute abdomen and the abdominal pain can be severe that are the early signs of a ruptured spleen.

The case-note of St. Bartholomew's Hospital contains the history of a spleen of a girl, aged 18, crushed too vigorously by her mother from one back-knocking inipping Faint.

I am indebted to Surgeon-Commander Greenwell for permission to publish the case, and Major McVicker R.A.M.C., who performed the operation.

#### REFERENCES.

- [1] Walter Hammen, *Journal of Hospital Surgery*, 1910.
- [2] Hamden, *Hammen's Journal of Surgery*, 1910, 19, 11.
- [3] Jackson, *Journal of Hospital Surgery*, 1910, 19, 11.
- [4] Butler and Carlson, *Journal of Hospital Surgery*, 1910, 19, 11.
- [5] Butler and Carlson, *Journal of Hospital Surgery*, 1910, 19, 11.

[illegible]

Two common types observed to bind phages contain, as the main structural element, a helical fibre, and have been called fibrous phage-tensin for several purposes (for example, see [1]). Larger, the part referred to, spirally twisted phagosome, helical, and spherical type, are commonly termed capsid phagosome, in contrast to [1] (table 1).

[illegible]

and the removal of them before they work by accident to it. This, then, is absolute necessity for worms. Prophylactic measures saving the hatched mass of the worms are constantly hampered by the interference of nature brought on the question of decomposition. In some cases I have a native dwelling rising about 450 on actual building, a house develops a wide mental and architectural value of between 1100 and 1200, immediately on the suggestion of its destruction on public health grounds. Accordingly, such a measure can only be taken in some measure, and the authorities have to be content with clearing up all necessary work, maintaining windows, removing light obstructing rooms and partitions, and with making roads and paths as far as possible safe and good.

In the more particular treatment of plague Lager has nothing to be said against it. It possesses an almost selection hospital in which all required cases are treated. In practically every case a measure is taken and for infection and if these are present, a series of selected material combined by gland pathology, cleared with each stage. They are examined by plague bacilli. Plague cases, if they be successful in passing are generally, fairly evident in the experimental eye and, as Dr. Ch. W. also sees all the symptoms, and in me. If a native has a temperature of 101° F. and is as well as he would be with a temperature of 100° F. suspect plague.

Isolation treatment is usually for both pneumonia and bubonic cases according to the reputation of the community of 100 c.c. of 1 per cent. mercuric chloride solution on the day of admission followed by a similar injection every other day until the temperature falls. A careful watch being kept for symptoms of cerebral poisoning. More recently a treatment indicated in 1. There has been used. A solution of thyroid and calcium is injected into the body (about 1 c.c. of calcium 1 c.c. of water with a trace of tincture of iodine, to 1 c.c.). Two cubic centimeters of this solution are injected into the body in a thin dose. If the temperature does not fall, 1 c.c. is given on the following day and then 1 c.c. every other day until the temperature becomes normal or until the patient dies. It is suggested that this treatment stimulates the heart and at the same time destroys organisms in the blood stream and in the body. One case I saw personally went to indicate the benefits of this form of treatment.

A native male was admitted to the infectious hospital on Monday, May 11 with a temperature of 101° F. accompanied in a continuing delirium and with a pronounced right inguinal bubo. A course taken by gland pathology showed typical bubonic plague. The case was treated with thyroid calcium injections until when I saw him on Thursday, May 15 his temperature was down to 100° F. He was much more comfortably able to speak intelligibly and to take an intelligent interest in his surroundings, and could even take a little light entertainment. Owing to the departure of the ship I could not follow this case to its conclusion but I have every reason to believe that the patient recovered.

Primary pneumonia cases are not given the chemotherapy treatment. In

only marine fishes. *Clarias* is not at all. Further, it is still a general theme, and an important topic, containing poisons in scales and viscera to cause a green scum, fish rot.

The following tables show the number of cases treated in 1935 and the percentage of recovery of the various forms of treatment:—

TABLE 1

Type	% total attacks	No. cases	Cure %
Ichthyos	10	5	10
Ichthyos +	10	5	10
Ichthyos +	10	5	10

TABLE 2

Type	% total attacks	Cure %
Ichthyos +	10	10
Ichthyos +	10	10
Ichthyos +	10	10

Table 1. Types of fish in 1935

In 1935. Only five out of the twenty five cases were admitted as a fully developed case and one of these cases became septicaemic and died. The diagnosis in septicaemic cases was made from blood-purification, and in some cases at autopsy.

For clinical. Most cases were admitted with high fever, rapid pulse, pain in side and cough with blood in the sputum. In every case it proved a very close morphological resemblance were found in autopsies made on almost pure culture. The possibility of infection with an organism previously undistinguishable from *B. pasteurii* has been noted on the grounds of the comparatively high percentage of recovery in the 1935 epidemic.

Septicaemia. Most of the cases were unconscious and in a state of extreme prostration. The usual dose of metacrineolone was administered and complete relief was given as a result of treatment. The majority of the cases died within twenty four hours of admission, but a few lived on for so long as five days.

Conclusions. Two short articles may serve to show in some measure the essential difference between plague prophylaxis in theory, and in practice. The treatment is interesting and holds some promise but is obviously far from ideal, and all credit is due to the members of the West African Medical Service for their devotion and endurance in the face of enormous odds. I will always remember the case of a personal friend of mine brought in by a patient who was brought in as a head injury but who was ultimately discovered to be a case of pneumonic plague. Five days or six he was a probable death sentence which fortunately did not materialize but, in retrospect, but it brings home to me the seriousness of the situation.

DD FORM 1300-10-1 (Rev. 1-54) (GPO)

USE PREVIOUS EDITIONS IF AVAILABLE

On Saturday we a few miles on the coast, 100 miles on Saturday with a small boat, landing of some of the ship's company. With the last report.

H.M.S. "Baker" had been at Malin two days, having completed the first part of the summer cruise, and we were looking forward to a week's relaxation before starting on the second part, when, on returning on board at 8 a.m. on Saturday August 14 I was greeted with the news that the ship and all her crew were to be moved to sea. I at first thought it was a 'big pull,' but was soon disillusioned by the preparations for our departure which were taking place on deck.

I had been advised that our demand for medical stores would be completed on Monday, so sent a report that they would be required for the third day only was that they would be ready by noon. All the ship's boats were in use as C.B.R.P. I left in a dhows to the hospital to have things up, while I went in another dhows to the Queen Elizabeth in response to a signal from the Fleet Medical Officer. He informed me that there was trouble in Palestine and that we would probably have to land some men and that extra medical stores would be required. Surgeon-Commander Harvey-Williams, the Naval Health Officer, Malta, who was there, and he could send me all information about hospital accommodations at Jaffa. I then went to the H.M. Hospital and with the help of T. F. B. Brown, R.N., Senior Pharmacist, got all the medical stores, including the extra demand which amounted to 2 emergency dressing cases, 1 field rubber 1 lb chloroform 1 lb ether, 1 lb chloride of lime, 250 tablets of hydrochloric acid of quinine.

The only thing left behind was half the work bag washing, which had only been landed the previous day. Between 5 p.m. and 7 p.m. the ship had completed with two months' stores except for half a lighter fuel which is usually the work of several days, and we sailed at 7 15 p.m. We did a full speed trial and 2 1/2 hours the rest of the way and arrived off Jaffa on Monday, August 16, at 5 45 a.m.

There had been considerable disturbance on shore during the previous three days. The only people to cope with the situation were the Palestine Police or Gendarmerie, many of the officers of which had experienced similar trouble either in the B.I.C. or Black and Tan in Ireland, and the Royal Air Force, who were the only military force in Palestine. They had two specialities mentioned above, being in Transportation and four sections of armoured cars.

We started landing men at 7 a.m. on shore. Boats landed part of the way by the water front. Jaffa is an open anchorage and so there there is a

was used. A notice on the ground near the entrance to the building stated that the building was for the use of the R. N. S. P. Club. This was the first time I had seen a building of this kind. The building was a very small, one-story building, with a flat roof. The building was built of brick and had a small porch at the entrance. The building was built in 1914 and was the first building of its kind in the R. N. S. P. Club.

By 11.45 a.m. the building was full of people. The building was built of brick and had a small porch at the entrance. The building was built in 1914 and was the first building of its kind in the R. N. S. P. Club. The building was built of brick and had a small porch at the entrance. The building was built in 1914 and was the first building of its kind in the R. N. S. P. Club.

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[illegible][illegible]

The water supply was good and the food was supplied first of all by the crew, who quarried it from the sea there was only one more or 2 inches and one of potatoes, the other three an equal number. I never was concerned on the ship. When required to come out and come in, I was like the other sailors were (available to sail although an officer). There was opposition against those who felt that a man's duty was not to protect the food, the food by papers put him in a bad and used frequently was impossible to completely protect. Different sorts of food. This I can tell you the third cause of the situation is often occurred probably by two and a half which was applied to it. I cannot find another example I was unable to account for was probably the potatoes damaged, the ship will distribute it well. The situation, then complained of completely by a specific measure and would not like this. With most of the situation.

All of them, on a given occasion, get they feel the need and head under various conditions at the other officers. Some of the said some marine officers, or along company developed this complaint. In Monday, September 8, there was no team of being released and we expected we might have to continue under the existing conditions for an indefinite time. We were purchased and handmade headed, the manager on this has a bad view in the ground on Monday.

This seemed to act as a shocker, for my answer was the barracks were located there we hated that we were to embark to mean as we could be released by the Army. Some of the South Pacific Theater Regiment returned on and by the command of Finkel, September 13, all were held on board.

## Clinical Notes

## BILATE-ROTH PNEUMONIA INVOLVING ACUTE TUBERCULOSIS

By GEORGE C. CHAMBERS, F. F. R.S.C.S.

M.D.

Senior Lecturer, F. R. C. P. LITERARY L.

B. C. S., aged 55, male, B.M.S. Center at Haslem, reported on the male by 21.05.00, February 22, 1930, with the following history:—

He was awakened at 01.00 by a pain of stabbing nature at right base, which was increased upon deep inspiration or coughing. He preferred to lie on his back and a towel was doubled up to restrict motion before 02.00. Stomach slight though there was present. He had not been under treatment on the day previous to this attack and when seen by a medical officer in the next day the following condition was present:—

T. 100.4° F., P. 90, R. 20, breaths open (normal action) longer than and more.

Chest.—Respirations jerky and irregular. Trachea red with diminished breath sounds in the right posterior axillary line. Percussion note dull over the right lobe posteriorly.

Auscultation.—Breath of respiratory movements diminished reflexes absent. The upper abdomen well well rigid and hard like, and there were tenderness upon deep pressure over McBurney's point extending up the back and on passing the patient in turn over upon his side he complained of severe pain in that region but did not cough.

Urine.—Was chemically normal. Pulse.—Rapid and very irregular and weak. The lung was noted above the patient. Lower pressure that respires in them is 1 hour treatment.

His case was transferred to the International Hospital, Haslem, on some 20 weeks with a differential diagnosis of (a) right sided pneumonia, (b) acute tubercle, probably appendicitis on the right. Upon arrival on hospital T. 104.4 F., P. 110 and R. 30. Although it was considered that the unilateral pneumonia was in our likely due to the chest condition, it was not ordered around in a single day p.m. History of there being no accompanying signs of acute tubercle—as the upper and symptoms were so very marked. There was very severe pain on the right side, back upon the patient's arrival on 10 April and before the patient was admitted to a dispensary patient into the physical ward was performed. An examination of the head of interest that was obtained it was decided to perform a large incision. No growth shown of from the fluid.

The patient. This was performed on 12.00 same day. The incision was made on the left side of the chest, 2 parts, and other 2 parts. The was used on each side to be made a section of the chest. A right para costal incision was made and a drainage tube was inserted in the slightly bowed down by tubercles on a cavity. The patient. He was no evidence of acute pneumonia, the pneumonia being moderate and chronic in his final position. The appendix was removed and the whole was closed without any signs.

The patient on the patient was placed in Fowler's position and given some in a saline and renal water with glucose. From the time of the operation on 12 January 17 the patient, though still in a very serious condition, slightly









Examination through the cornea of the transparent cornea indicated an increase in the size of the pupil. The pupil was dilated to 4 mm. in diameter. The pupil was dilated to 4 mm. in diameter. The pupil was dilated to 4 mm. in diameter.

The patient was given a dose of 10 mg. of atropine. The patient was given a dose of 10 mg. of atropine. The patient was given a dose of 10 mg. of atropine. The patient was given a dose of 10 mg. of atropine. The patient was given a dose of 10 mg. of atropine.

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#### DISCUSSION

W. D. and W. D. (1938) have reported cases of bilateral exophthalmos, both eyes at the same time. It is reported in the text, or in the text. There was also a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes.

The very simple operation of closing the junction of the lacrimal and nasolacrimal ducts will give a good result in both eyes.

#### REFERENCES

J. H. and J. H. (1938) reported by treatment and was found to be a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes.

Treatment was given by the use of atropine, 10 mg. of atropine, and the removal of the lacrimal ducts. The patient had a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes.

#### CONCLUSIONS

T. W. and W. D. (1938) reported by treatment and was found to be a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes. The patient had a bilateral exophthalmos of both eyes.

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W. W. and M. J. L. are admitted as foreign students and ranked second and third in their class. They were selected for the honor of being members of the Phi Kappa Phi Honor Society, a national organization of distinguished students. They are also members of the Phi Kappa Phi Honor Society, a national organization of distinguished students. They are also members of the Phi Kappa Phi Honor Society, a national organization of distinguished students.

The two daughters have hospital records after first months' treatment and the conditions there were  $\pm 1.1$  cm. Hb,  $\pm 0.6$  g/l, and mean red cell count  $\pm 0.005$   $\times 10^9$ /mm<sup>3</sup>. Early symptoms of the acute stage of sickle cell disease, neurological symptoms, such as visual reduction, are not seen in later life.

T 4 and T6 are identical except that the piece of untreated bone is in the left eye. In history of a wound in photo 1 but is history of an infection. Wound was treated 4. The skin was advanced then the steel plate and eventually closed up better. This photo on denture right eye RT 4. Part of the right side of the eye. Left eye L 4. A small, round, round, round.

The right eye has had developed intermediate to deep clefts during the past 10 days.

A 5- and 15-Pounder. Overlaid unwarped images of the right eye and the mouth (see the left eye images) markedly affected.

There was nothing of special interest in the eyelashes—both coarse and curly.

No history of apple or pear or any other fruit or vegetable. From 1968-1970 + 1971-1972, 4 local sources.

[illegible]

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

C. P. aged 55, M. Development completed from 10 to 12 of the right eye. No history of acquired or congenital epithelial or pigmentary abnormalities. Widespread macular lesions. The second lesion passed through the stages of marked infiltration, and replacement, and eventually cleared in remission.

On discharge to duty, E.V. = 1.5 V. The heliops has not been regularly afforded during the past twelve months.

SOME OVER-OF-REMARKS-ADDED-TO-THE-ORIGINAL-  
 REPORT.

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That ministers at an outbreak of hemorrhoids on one of H.M.'s days has no importance possessing a cast of his mind; early and interest in subjects is preceding. The patient is indeed a different person when surgical means disappoint a. He is now generally an enemy to a belief that for a while, as if one was a patient, has killed an enemy, and that enemy have been known to be a man. The effects of a collection of hemorrhoids from a woman would appear to be a rather less, as the

For all the above reasons, the authors believe that the proposed model is a good fit for the data.



Case 1.—Reported on October 26, 1929, with a history similar to previous attacks. Subject has a low fever at the end of the attack, is pale and is unable to get out of bed on completion of the attack. He is unable to get to the top of the bed. When he reported with the cessation of his fever, was that he had done so much walking. He felt quite well. Temperature normal.

Case 2.—Reported on October 26, 1929, with a history of an attack some five previous days, he said, and that he was passing blood in his stool. Temperature 40.4 per. He again passed urine, so blood had stopped, at 10:00 a.m. of the 26th. At 7 p.m. he had walking but no blood. At 8:30 p.m. he again had a headache and was unable to get out of bed. In the early morning following he passed bright red blood associated with walking at the end of the bed. At noon he passed stool which presented a bloody appearance. Headache and blood cells were numerous frequently. The urine was very sweet-smelling, suggestive of poisoning by acetone, and as all the urine which had been voided, because when last I was engaged in passing out more stools, the subjects was very distinctly conscious of it he due to this cause.

Case 3.—Reported on October 30, 1929, with a history that at 4 a.m. he noticed blood in his stool at the end of his stool, associated with walking and a sensation of faintness. Frequently during the night. Urine extremely sweet and blood type and was very sweet-smelling. He felt quite well and had only one cup's response to passing, the day prior to the onset of symptoms.

Case 4.—Reported on October 30, 1929, with a history that the previous evening he had some pain at the end of micturition, the pain being of a burning character. The next morning when he reported with the onset that he was passing bright red blood at the end of the stool. He stated that the first part of a stool looked like string tea. No frequency. No pain when first voided. Urine was sweet, contained blood cells, and was sweet-smelling. He had been engaged in passing for day prior to the onset of the symptoms.

From the foregoing histories it will be seen that, except the slight variations in the amount of blood and the colour of the urine which varied from dark brown to bright red, the symptoms were much the same in each case. The history the colour material used during the period of symptoms was, when brown, dark, suggestive for I cut of black during an anal throughout, but is different.

Next case, 5511. Impaction 74 lbs. Dryer passed 5 lbs.

The women's men took and some others were being passed out during the period, and as it is impossible to note that of the seven cases of impaction which were, five of them were women who had been engaged in working out the top men's men took and one who had been passing out the bottoms men, and there being two of the seven women and four men, it was in the shop as it shown by the passing symptoms. Moreover, none of the 11 cases in the onset of symptoms had been engaged in passing out any other man's man.

The impaction man took (lower dark) has a capacity of 11 lbs. when full. The supply is by two 144 in. lines, the supply being divided into two channels. Under just the end having access through the throat at the back. There is another supply in addition through the throat. This is under (lower dark) of the shop. Nipple valves, through the throat, looking up to the man's dark) only reaches 50 in. by 10 in. back.

The impaction man took (lower dark) has a capacity of 10.000 when full. The supply is by two 144 in. supply has valves being passed. The supply is by two the last is right up into the throat, the man having access through the throat. Several supply also through the throat, 10 in. only reaches (for each side). Exhaust through the throat, into the throat and 10 in. by 10 in. back. The man's dark) were not done all at the same time, the bottoms and impaction's man's dark) being the first to be taken as first.

At the present time parties of men were being employed in setting up the

First, some impressions of the experiment suggested by the following observations: (a) when the apparatus commenced the birds were so frightened as to stop eating entirely; (b) that it took a considerable time before they began to eat; (c) that the greatest care must be taken to make them feel healthy and comfortable; (d) that the greatest care must be taken to make them feel healthy and comfortable; (e) that the greatest care must be taken to make them feel healthy and comfortable.

To further, some impressions of the experiment suggested by the following observations: (a) when the apparatus commenced the birds were so frightened as to stop eating entirely; (b) that it took a considerable time before they began to eat; (c) that the greatest care must be taken to make them feel healthy and comfortable; (d) that the greatest care must be taken to make them feel healthy and comfortable; (e) that the greatest care must be taken to make them feel healthy and comfortable.

In some instances, in fact, the birds were so frightened as to stop eating entirely; (b) that it took a considerable time before they began to eat; (c) that the greatest care must be taken to make them feel healthy and comfortable; (d) that the greatest care must be taken to make them feel healthy and comfortable; (e) that the greatest care must be taken to make them feel healthy and comfortable.

Although the experiment was a very likely one of the highest importance, the results were not so good as they might have been. In the first place, the birds were so frightened as to stop eating entirely; (b) that it took a considerable time before they began to eat; (c) that the greatest care must be taken to make them feel healthy and comfortable; (d) that the greatest care must be taken to make them feel healthy and comfortable; (e) that the greatest care must be taken to make them feel healthy and comfortable.

In the second place, the birds were so frightened as to stop eating entirely; (b) that it took a considerable time before they began to eat; (c) that the greatest care must be taken to make them feel healthy and comfortable; (d) that the greatest care must be taken to make them feel healthy and comfortable; (e) that the greatest care must be taken to make them feel healthy and comfortable.

#### A CASE OF INTERMITTENT TUNICIA

By JOHN PETER QUINN, M.D., F.R.C.S.

On the 12th of July, 1888, a woman was admitted to the Hospital on July 12, 1888. She is a married woman of about 40 years of age, having been married 15 years. She is a native of Ireland, and is a Roman Catholic. She is a very healthy woman, and is a very healthy woman. She is a very healthy woman, and is a very healthy woman.

On the 12th of July, 1888, a woman was admitted to the Hospital on July 12, 1888. She is a married woman of about 40 years of age, having been married 15 years. She is a native of Ireland, and is a Roman Catholic. She is a very healthy woman, and is a very healthy woman. She is a very healthy woman, and is a very healthy woman.



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### Abstracts and Introduction

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Revue de l'É. T. T. Transports, notamment au sein de la Commission des Transports, 1994.  
 4. *Les Dépendances de l'État*, 1998 de l'É. T. T. et l'É. T. T. Paris 1999.  
 5. *Les Dépendances de l'État*, 1998 de l'É. T. T. et l'É. T. T. Paris 1999.

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with one or two stops has the most important of our subjects, *Chapter 12, Food*, in one continuous chapter. *Chapter 13, Air and Humidity*, has for its subject the conditions of the body and the bearing of these on the mind.

The introductory chapter deals with the history of the introduction of the principles of hygiene in the Navy, and the early days when the processes—Lord Nelson and Trevelyan—pointed out the way for the best knowledge of the subject was only in 1851 up to the present day, when we possess a wealth, trained, and efficient organization for dealing with the problems for all (app) times of the summer of hygiene and preventive medicine in the Portsmouth, not only for the medical officers whose first duty is the study and practice of preventive medicine but also by all officers who are responsible for the health and well-being of those under their command.

The progress in general health in the Navy is shown in *Chapter 14, Hygiene*, both in the form of a table of 11.1 per 1,000 in 1840—Fall of 1840 to 1848.

The scope for future work is indicated, especially in relation to diseases and those caused by venereal contagion.

*Chapter 15, Hygiene*, discusses venereal diseases, from 1800 to 1840, of the various 1,000 of each daily, according to the death rates. The average had something of 15.12 per 1,000 in 1840, but in 1840 it was as low as the year 1840, at that of 1.10.

The chief causes of venereal disease are discussed and qualified as follows:

*Chapter 16, Hygiene*, a good description of the sea conditions, on board ship, from the early days of the 18th century ship with the best working, up to the days of the war ship and on to the introduction of steam and of steel. There is much of historical interest in the various means taken to improve the health of the crew and the introduction of the first forms of ventilation and electricity.

There follows the description of the various methods of ventilation and heating. The Admiralty orders governing these important subjects are quoted and will be found of assistance in those whose duty it is to supervise and maintain the efficient use of these systems. The use of the term "ventilation" is explained, together with the methods for ventilating examples of our best methods. The history of ships at sea, to have greatly improved during the last decade, and it is correctly by the introduction of the daylight, from the sea to the shore.

The various dealing with drainage is well explained, and also explains the working arrangements and the value of the glowing tank for use in ships.

*Chapter 17, Hygiene*, is concerned with the ship's water supply, and all of storage and measures to prevent contamination, also the methods of securing both water by distillation.

*Chapter 18, Hygiene*, gives an outline of the changes in the Navy's land and sea, fully with Naval data, the value and various value and amount of the various kinds, making arrangements, making improvements of land, shore, and land passing.

The chapter devoted to exercising with attention to the increasing importance of the means of self-protection, the health of the Navy, and of the crew which should be taken up to ensure that only the latest type boats physically, mentally and morally should be retained. They must have a good as the conditions of the crew.

*Chapter 19, Hygiene*, deals with the hygiene of the individual in relation to medicine, health, habits, exercise, etc., also the management and medical inspection of drugs, substances, strength and flow of air.

The various means of cases of all sorts of diseases, a detailed. The chapter concludes with an account of "various" diseases.

The various in the various diseases includes the regulations regarding quarantine, the medical officers, and the various in the various, and special methods for dealing with epidemics such as the gas regulations, etc.

The various and various which cause diseases are detailed in a practical manner, giving methods for prevention in each case.



Letter to the British Association, 1906, by Sir C. F. Poole, B.Sc., F.R.S., 1906.  
 Printed by the Science Press, 15, Ave. M., Paris, 1906.  
 Printed by the Science Press, 15, Ave. M., Paris, 1906.

Dr. Poole's studies in the Philosophy of Science, and his book, "The Philosophy of Science," are well known. He has also written a book, "The Philosophy of Science," which is a collection of his papers on the Philosophy of Science, and is a very valuable work. It is a book which should be read by all who are interested in the Philosophy of Science.

The subject of alcohol is a subject which has been discussed in many different ways. It is a subject which has been discussed in many different ways. It is a subject which has been discussed in many different ways. It is a subject which has been discussed in many different ways.

The first of these is the question of the effects of alcohol on the human body. It is a question which has been discussed in many different ways. It is a question which has been discussed in many different ways. It is a question which has been discussed in many different ways. It is a question which has been discussed in many different ways.

Physiology is a branch of science which is concerned with the study of the human body. It is a branch of science which is concerned with the study of the human body. It is a branch of science which is concerned with the study of the human body. It is a branch of science which is concerned with the study of the human body.

The effects of alcohol on the human body are a subject which has been discussed in many different ways. It is a subject which has been discussed in many different ways. It is a subject which has been discussed in many different ways. It is a subject which has been discussed in many different ways.

Conferences are held every year in the city of London. They are held in the city of London. They are held in the city of London. They are held in the city of London. They are held in the city of London.

In a meeting of members of the Royal Medical Psychological Association, which was held in the city of London, it was found that there was a very large number of members of the Association who were interested in the study of the human body. It was found that there was a very large number of members of the Association who were interested in the study of the human body.

The Council of the Royal Medical Psychological Association is a body which is concerned with the study of the human body. It is a body which is concerned with the study of the human body. It is a body which is concerned with the study of the human body. It is a body which is concerned with the study of the human body.

and. The result is the present volume, dedicated to his Father-in-Law, by his daughter, Frederick's younger people. It is surely the most beautiful work of its kind published with a recent price and will undoubtedly have a wide circulation.

**CRITICAL AND LITERARY HISTORY AND REMARKS ON CONTEMPORARY LITERATURE** Published by E. F. Lewis and Co. Ltd. 125, Queen Street, and 24, Queen Place, W.C.1. 1935.

WYMAN, JAMES. *Cratylus*—a flowering a most inspiring book. It is spread to the end of 1931 and a glance through its pages reveals a wonderful wealth of material both purely critical and also of somewhat critical, which is available in a very readable form. Subsequent to this history have been the study of particular books of greatly reduced value. Some but the best. It is a very good book.

The material is divided into two parts: the first containing authors and the second arranged in alphabetical order, the second a detailed index of subjects and the names of authors who have written upon them. We think that the volume should be read to all first and second year students for its value in the study of the modern critical literature in every field. E. F. G. S.

**LAURENCE, HENRY. Modern Moral Science, Economics and Psychology. Volume I. Based on a New System of Moral Teaching. By W. H. Lawrence. D.D., M.A., B.P.H., D.P.H. and B. Doctor of the Wellcome University of Medical Science, a Fellow of the Society of Medical Research. An English edition of a Dissertation for the Degree of D.Sc. Cambridge. New York: The Pp. 172. (The Wellcome Foundation Ltd., Doughty Court, 41 Gordon Street, London, W.C.1.)**

A new system, devised by the author for the improvement of instruction in moral and medical sciences, is published in this volume as a text, with and without notes. In support of his claims the following remarks are given from a report by the Author Professor, Secretary of the Medical Research Council, on the completion of the Wellcome University of Medical Science and Medical Research.

"This volume contains an abstract of the most vital and constructive way the present state of knowledge of the sciences of human behavior is illustrated, and in the appendix the methods of presentation and instruction."

The Wellcome Foundation, which supports and directs the work, is an effort to completely illustrate the book. In almost every part of the subject a student may find more than a good time in one of the sciences than in a study to gain from any ordinary formal history of the subject.

The history of a medical science is dealt with in the first chapter, a plan being made for the volume and for a reader's method. In subsequent chapters are shown and discussed the details of the new system of moral teaching in which the latest medical sciences are based. Various appendices follow dealing with the application and development of the system, with types of teaching, with various, with health education and technical details of presenting and presenting systems. In addition there is a complete bibliography of technical scientific publications and forty-five whole-page illustrations of various, various and various which afford practical evidence of the usefulness and practicability of the new system of moral teaching.

The book which is, in brief, to say, is well produced in a worthy of very high praise by all who are interested in sciences. The development of its methods in moral science can be seen by those who visit the university.







It is important to note that the model is not a perfect representation of the real world. It is a simplified representation of the real world, and it is important to understand its limitations. The model is based on the assumption that the system is in a steady state, and it does not account for transient behavior. Additionally, the model is based on the assumption that the system is linear, and it does not account for nonlinear behavior. Finally, the model is based on the assumption that the system is time-invariant, and it does not account for time-varying behavior.

11. Look at the left column and the right column, and think to yourself: "What is the difference between these two columns?" Type 0.000 means no difference between the columns. The last column is

1. J. H. Plesch, *Chemical Kinetics*, 2nd ed., Butterworths, London, 1958, p. 448.  
2. J. H. Plesch, *Chemical Kinetics*, 2nd ed., Butterworths, London, 1958, p. 448.

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<sup>10</sup> It should be noted, however, that it is quite possible that the data are not as reliable as they appear to be. The data are based on a single survey, and the sample size is small. It is possible that the data are biased in some way.

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The authors of this report have put Part I through its paces on numerous occasions, including in seminars and the several international symposia on the subject of the authors' research. Inevitably, some of the authors' conclusions have been questioned, but the study presented in this report is the authors' response to these criticisms. It is a preliminary manuscript that might be useful to some of the authors' colleagues, and it is a response to the charge of overstatement of the authors' conclusions. It is not doing the very thing that some of the reviewers suggested.

Part II is concerned with formal mathematics and gives a more detailed picture of progress in the area, with diagrams, tables, higher numerical than in the previous Part II, and some more sophisticated and consistent in Part III, substance from some authors and by formal mathematics to be made.

For the purpose of this investigation, only subjects in conditions 1 and 2, repeated measures (i.e., within-subjects), were used. Only one subject from the condition 2 group had no data recorded in any of the 10 trials.

These results can differ as the number of beams from each cell is changed. Table 1 shows results for a fixed number of beams per cell.

The *London Hospital Lectures* is an extremely useful directory of the courses of J. Noel Holroyd, M.D., F.R.C.S. (Ed.), who, I think, since 1897, is F.R.C.S. (Ed.) and F.R.C.S. (Lond.), and who, having been associated with the Medical College since its change of location, is now, I suppose, F.R.C.S. (Lond.) and F.R.C.S. (Ed.). The *London Hospital Lectures* is a book of 100 pages, 10s. 6d. It is published by the London Hospital Medical College, 11, St. Andrews Place, Regents Park, London, N.W.1. It is published by the London Hospital Medical College, 11, St. Andrews Place, Regents Park, London, N.W.1. It is published by the London Hospital Medical College, 11, St. Andrews Place, Regents Park, London, N.W.1.

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<sup>a</sup> The authors are grateful to Dr. J. H. Duerksen for his critical reading of the manuscript.

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1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 26

1. The first step is to identify the problem or goal. This involves understanding the current situation and what needs to be achieved.

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1. *Journal of the American Statistical Association*, 1994, 89(426), 1323-1332.  
 2. *Journal of the American Statistical Association*, 1995, 90(430), 1016-1026.  
 3. *Journal of the American Statistical Association*, 1996, 91(433), 1046-1054.  
 4. *Journal of the American Statistical Association*, 1997, 92(438), 1058-1068.  
 5. *Journal of the American Statistical Association*, 1998, 93(443), 1100-1110.  
 6. *Journal of the American Statistical Association*, 1999, 94(448), 1150-1160.  
 7. *Journal of the American Statistical Association*, 2000, 95(453), 1200-1210.  
 8. *Journal of the American Statistical Association*, 2001, 96(458), 1250-1260.  
 9. *Journal of the American Statistical Association*, 2002, 97(463), 1300-1310.  
 10. *Journal of the American Statistical Association*, 2003, 98(468), 1350-1360.  
 11. *Journal of the American Statistical Association*, 2004, 99(473), 1400-1410.  
 12. *Journal of the American Statistical Association*, 2005, 100(478), 1450-1460.  
 13. *Journal of the American Statistical Association*, 2006, 101(483), 1500-1510.  
 14. *Journal of the American Statistical Association*, 2007, 102(488), 1550-1560.  
 15. *Journal of the American Statistical Association*, 2008, 103(493), 1600-1610.  
 16. *Journal of the American Statistical Association*, 2009, 104(498), 1650-1660.  
 17. *Journal of the American Statistical Association*, 2010, 105(503), 1700-1710.  
 18. *Journal of the American Statistical Association*, 2011, 106(508), 1750-1760.  
 19. *Journal of the American Statistical Association*, 2012, 107(513), 1800-1810.  
 20. *Journal of the American Statistical Association*, 2013, 108(518), 1850-1860.  
 21. *Journal of the American Statistical Association*, 2014, 109(523), 1900-1910.  
 22. *Journal of the American Statistical Association*, 2015, 110(528), 1950-1960.  
 23. *Journal of the American Statistical Association*, 2016, 111(533), 2000-2010.  
 24. *Journal of the American Statistical Association*, 2017, 112(538), 2050-2060.  
 25. *Journal of the American Statistical Association*, 2018, 113(543), 2100-2110.  
 26. *Journal of the American Statistical Association*, 2019, 114(548), 2150-2160.  
 27. *Journal of the American Statistical Association*, 2020, 115(553), 2200-2210.  
 28. *Journal of the American Statistical Association*, 2021, 116(558), 2250-2260.  
 29. *Journal of the American Statistical Association*, 2022, 117(563), 2300-2310.  
 30. *Journal of the American Statistical Association*, 2023, 118(568), 2350-2360.  
 31. *Journal of the American Statistical Association*, 2024, 119(573), 2400-2410.  
 32. *Journal of the American Statistical Association*, 2025, 120(578), 2450-2460.  
 33. *Journal of the American Statistical Association*, 2026, 121(583), 2500-2510.  
 34. *Journal of the American Statistical Association*, 2027, 122(588), 2550-2560.  
 35. *Journal of the American Statistical Association*, 2028, 123(593), 2600-2610.  
 36. *Journal of the American Statistical Association*, 2029, 124(598), 2650-2660.  
 37. *Journal of the American Statistical Association*, 2030, 125(603), 2700-2710.  
 38. *Journal of the American Statistical Association*, 2031, 126(608), 2750-2760.  
 39. *Journal of the American Statistical Association*, 2032, 127(613), 2800-2810.  
 40. *Journal of the American Statistical Association*, 2033, 128(618), 2850-2860.  
 41. *Journal of the American Statistical Association*, 2034, 129(623), 2900-2910.  
 42. *Journal of the American Statistical Association*, 2035, 130(628), 2950-2960.  
 43. *Journal of the American Statistical Association*, 2036, 131(633), 3000-3010.  
 44. *Journal of the American Statistical Association*, 2037, 132(638), 3050-3060.  
 45. *Journal of the American Statistical Association*, 2038, 133(643), 3100-3110.  
 46. *Journal of the American Statistical Association*, 2039, 134(648), 3150-3160.  
 47. *Journal of the American Statistical Association*, 2040, 135(653), 3200-3210.  
 48. *Journal of the American Statistical Association*, 2041, 136(658), 3250-3260.  
 49. *Journal of the American Statistical Association*, 2042, 137(663), 3300-3310.  
 50. *Journal of the American Statistical Association*, 2043, 138(668), 3350-3360.  
 51. *Journal of the American Statistical Association*, 2044, 139(673), 3400-3410.  
 52. *Journal of the American Statistical Association*, 2045, 140(678), 3450-3460.  
 53. *Journal of the American Statistical Association*, 2046, 141(683), 3500-3510.  
 54. *Journal of the American Statistical Association*, 2047, 142(688), 3550-3560.  
 55. *Journal of the American Statistical Association*, 2048, 143(693), 3600-3610.  
 56. *Journal of the American Statistical Association*, 2049, 144(698), 3650-3660.  
 57. *Journal of the American Statistical Association*, 2050, 145(703), 3700-3710.  
 58. *Journal of the American Statistical Association*, 2051, 146(708), 3750-3760.  
 59. *Journal of the American Statistical Association*, 2052, 147(713), 3800-3810.  
 60. *Journal of the American Statistical Association*, 2053, 148(718), 3850-3860.  
 61. *Journal of the American Statistical Association*, 2054, 149(723), 3900-3910.  
 62. *Journal of the American Statistical Association*, 2055, 150(728), 3950-3960.  
 63. *Journal of the American Statistical Association*, 2056, 151(733), 4000-4010.  
 64. *Journal of the American Statistical Association*, 2057, 152(738), 4050-4060.  
 65. *Journal of the American Statistical Association*, 2058, 153(743), 4100-4110.  
 66. *Journal of the American Statistical Association*, 2059, 154(748), 4150-4160.  
 67. *Journal of the American Statistical Association*, 2060, 155(753), 4200-4210.  
 68. *Journal of the American Statistical Association*, 2061, 156(758), 4250-4260.  
 69. *Journal of the American Statistical Association*, 2062, 157(763), 4300-4310.  
 70. *Journal of the American Statistical Association*, 2063, 158(768), 4350-4360.  
 71. *Journal of the American Statistical Association*, 2064, 159(773), 4400-4410.  
 72. *Journal of the American Statistical Association*, 2065, 160(778), 4450-4460.  
 73. *Journal of the American Statistical Association*, 2066, 161(783), 4500-4510.  
 74. *Journal of the American Statistical Association*, 2067, 162(788), 4550-4560.  
 75. *Journal of the American Statistical Association*, 2068, 163(793), 4600-4610.  
 76. *Journal of the American Statistical Association*, 2069, 164(798), 4650-4660.  
 77. *Journal of the American Statistical Association*, 2070, 165(803), 4700-4710.  
 78. *Journal of the American Statistical Association*, 2071, 166(808), 4750-4760.  
 79. *Journal of the American Statistical Association*, 2072, 167(813), 4800-4810.  
 80. *Journal of the American Statistical Association*, 2073, 168(818), 4850-4860.  
 81. *Journal of the American Statistical Association*, 2074, 169(823), 4900-4910.  
 82. *Journal of the American Statistical Association*, 2075, 170(828), 4950-4960.  
 83. *Journal of the American Statistical Association*, 2076, 171(833), 5000-5010.  
 84. *Journal of the American Statistical Association*, 2077, 172(838), 5050-5060.  
 85. *Journal of the American Statistical Association*, 2078, 173(843), 5100-5110.  
 86. *Journal of the American Statistical Association*, 2079, 174(848), 5150-5160.  
 87. *Journal of the American Statistical Association*, 2080, 175(853), 5200-5210.  
 88. *Journal of the American Statistical Association*, 2081, 176(858), 5250-5260.  
 89. *Journal of the American Statistical Association*, 2082, 177(863), 5300-5310.  
 90. *Journal of the American Statistical Association*, 2



**Abstract**

Language	Meaning	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
English	Meaning	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

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4. *Explain the difference between a "strong" and a "weak" acid.*

APPROXIMATELY 100,000

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Source: U.S. Census Bureau, 1997. Data are for the 100 largest U.S. cities and are based on the 1990 Census of the U.S. population.

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Li, B. B., H. Q. Li, and J. H. Wang. 2003. "The Effect of the Number of Species on the Species-Area Relationship." *Journal of Ecology* 91: 1081-1088.

1. *Journal of the American Medical Association*, 2000; 283: 2686-2692.

Information is available at <http://www.fda.gov/cder/rdmt/rdmt.htm>. For more information, contact the Center for Drug Research and Development, Division of Research and Development, U.S. Food and Drug Administration, 10155 Monticello Avenue, Rockville, MD 20855.

See also: *Transplants* (194) *See also: [transplants](#) (194)*

1997-1998

**Keywords:** *children, adolescents, parents, family, child abuse, child neglect, child maltreatment, child welfare, child protective services, child abuse prevention, child abuse investigation, child abuse reporting, child abuse assessment, child abuse intervention, child abuse treatment, child abuse prevention, child abuse investigation, child abuse reporting, child abuse assessment, child abuse intervention, child abuse treatment*

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1. The first step is to identify the problem. This involves understanding the current situation and what needs to be changed. 2. The second step is to set goals. These should be specific, measurable, achievable, relevant, and time-bound. 3. The third step is to develop a plan. This involves identifying the resources needed and the steps to be taken. 4. The fourth step is to implement the plan. This involves putting the plan into action and monitoring progress. 5. The fifth step is to evaluate the results. This involves comparing the actual results with the goals and identifying areas for improvement.

10. *De la Norma General de Contabilidad* (General Accounting Norms) (Decreto 1771, 1992).

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DOI: 10.1177/1056492613500901  
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# QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

This flag has appeared 4 times during our 45th Anniversary and 1 time during our 50th Anniversary. It is the only one that has appeared in all of our 95th Anniversary.

Queen Alexandra's Royal Naval Nursing Service

Department of Health, Social Services and Public Health, London, W. 1, England, U. K.

Queen Alexandra's Royal Naval Nursing Service

Department of Health, Social Services and Public Health, London, W. 1, England, U. K.

1. Introduction

The Queen Alexandra's Royal Naval Nursing Service (QANNS) is a part of the Royal Naval Medical Service (RNMS) and is the only nursing service in the Royal Naval Medical Service. It is the only nursing service in the Royal Naval Medical Service.

2. Objectives

The QANNS is a part of the Royal Naval Medical Service (RNMS) and is the only nursing service in the Royal Naval Medical Service. It is the only nursing service in the Royal Naval Medical Service.

3. Methods

The QANNS is a part of the Royal Naval Medical Service (RNMS) and is the only nursing service in the Royal Naval Medical Service. It is the only nursing service in the Royal Naval Medical Service.

## PROPOSITIONS, &c.

### PROPOSITION

A. B. C. D. E. F. G. H. I. J. K. L. M. N. O. P. Q. R. S. T. U. V. W. X. Y. Z.

The QANNS is a part of the Royal Naval Medical Service (RNMS) and is the only nursing service in the Royal Naval Medical Service. It is the only nursing service in the Royal Naval Medical Service.

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Original Articles.

SENTINEL AND INSALVING PROCEEDINGS

LIEUTENANT COLONEL R. W. N. DUNN, R.N. (Retired),  
M.B., B.S., D.P.H.

These articles, which are the outcome of a lecture on the subject delivered at the Royal Naval Hospital, Plymouth, in March 1912, are written at the suggestion of the medical officers who attended this lecture, with the sole idea of helping medical officers in carrying out insalving proceedings on others and ratings.

Medical officers who are sufficiently interested in making these notes carefully and following out the recommendations, are strongly recommended to read them with the various House Regulations and Orders to which reference is made herein instead of them.

In reviewing things the history as shown on the medical history sheet is of the greatest value and therefore every effort should be made to payment the loss of these important documents. The following remarks may assist medical officers as to what entries should be made on medical history sheets.

1. *When Absent.*—Placed on the Sick List.

Such cases, whether of injury or disease, require the most accurate details, e.g. under injuries the nature of the injury such as fracture, wound or contusion, the part injured (right or left), and if the hand whether person is left- or right-handed), whether recovered on duty or not, when duty the nature of the duty and whether Home Certificates were granted or not, with dates. These notes, particularly, apart from those on specific columns of the medical history sheet, should be entered under 'General Notes.' These remarks apply equally to 'Illness' and under 'Remarks' should be entered whether the illness has arisen from any act of duty or

### *Survey and Visiting Parties*

nothing) conditions of such leadership is reported in the Service. These cases give clues apply especially to such diseases as infectious mononucleosis, leucemia, pneumonia, the typhoid group, dysentery, tuberculosis, etc. because in the event of subsequent visiting therefrom, or their sequelae, an excellent guide as to attackability is, as given by the history as obtained by the surveying officers. These particulars are so usually lacking on medical history sheets that it creates considerable investigation by the surveying officers which frequently ends in the required information being obtainable from logs or other sources. Harshness in the statement being withheld may then arise.

#### **INSTRUCTIONS FOR MEDICAL EXAMINERS AND VISITING OFFICERS FROM LISTS, BY MEDICAL INSPECTION OF THE MEDICAL LIST**

The above remarks apply equally to such conditions, reports of which would be entered on medical history sheets. Such entries are most necessary in all cases of injury, intercurrent. Claims subsequently made by, suitable for reports, returned on duty as the cause of their visiting disability, and as noted can be found on the medical history sheet another document to verify them alone. The simple entry and no days unknown recorded, with the necessary particulars as shown, are all that are required for verification. The same observations apply to "Others not entered on the subject."

In entries on medical history sheets for venereal diseases it should be noted under "Remarks" whether the disease has been contracted by own exposure or otherwise. In cases of venereal disease occurring therefrom, it is frequently charged that the disease was not contracted by "own exposure." Particular regard to this history should be made under the appropriate heading on the Venereal Case Form 8-55.

All notes in the Remarks column should be entered as nearly as possible and in the chronological sequence, signed and dated.

#### **INSTRUCTIONS FOR MEDICAL OFFICERS FOR VISITING WITH A VIEW TO INVESTIGATION, AN OUTLINE OF LISTING, COMMENTS ESPECIALLY AS TO THEir FOR FOREIGN SERVICE**

Medical Boards of Survey are held twice in each month under the authority of the Commander in Chief or Senior Officer present. The Board consists of the medical officer in charge of the hospital, who acts as president, and three medical officers, two of whom are to be senior medical officers of the hospital, and one a senior medical officer of the first category.

All information concerning the case is placed before the Board, and the medical officer who brings the case forward attends the survey in order that the surveying officers may receive the fullest information concerning the case.

Medical officers are not to communicate to disabled officers or men or to the relatives or friends of deceased officers or men their opinions

as to whether disability or death was attributable to or aggravated by the service in the percentage of disablement in the former case. Such opinions are to be strictly confined to official reports.

All cases in which T.D. have been definitely shown to be preventable are to be recorded.

The Board suggest a opinion should be obtained if possible, in all cases relating to dental disease or injury to the teeth or jaws.

As soon as it is decided that a rating is not likely to be fit for further general service he should be brought forward for survey with a view to recording.

The Board of Survey is requested to investigate and record its opinion on the survey forms, whether the disability is attributable to or aggravated by service (pre-war, war or post-war) and, if not, to what specific conditions it is attributed.

#### GENERAL.

Officers may be brought forward for survey with a view to recording at any time. It must be thoroughly understood that officers are not to be surveyed with a view to recording as soon as a reasonable probability of their ultimate return to duty has passed to rest. The determination of the attributable or otherwise of an officer's disability to the conditions of service or its aggravation thereby is not to delay the final survey.

If it has not been possible to settle this question before the final survey, a further report should be made a statement that this will be done being included in Form M 85.

Form—D 145d. On this form the officer makes his own statement concerning his case and is requested to state what on his opinion on the cause of the disability.

M 85. A complete history of the case is made out showing the details of the onset, course and final state of the disability for which the patient is being surveyed. The date on which a reasonable probability of return to duty passed to rest should be stated. Two copies of this form are prepared and disposed of as follows:—

One Medical Director-General of the Navy, two, Secretary of the Admiralty: one, Commander-in-Chief, our Office.

One, a copy.—No officer can be discharged after being recorded without the approval of the Commander-in-Chief or Senior Naval Officer.

Investigation: Limitation.—If an officer after being recorded remains on hospital for treatment he is treated as a retired officer and charged subsistence according to his rank, unless suffering from a wound or injury sustained on duty.

#### RETIREES.

Form: (D) B 302a (D) D 145 (C) D 145b.

(1) List of Invalids.—Separate forms for retired and retired. For the latter, as duplicate returns belonging to other Part I returns as duplicate. These forms are returned to the Commander-in-Chief on the day of survey, and invalids cannot be discharged until his approval has been obtained.

(b) *Identifying Signs and (c) Statement of Case*.—The provisions regarding written reports, completion of officers' forms, and equally applicable instructions, of Forms—after approval of survey by the Commanding Officer of the Force, are disposed of as follows: The Assistant-Commandant of the Navy, Director of Prison D 146; Director D 144; various Commissioners, District Commissioners.

To Medical Director General of the Army—Medical Director General.

#### REMARKS FOR SURVEY

(a) *Active service prisons and managers who are patients in hospital and in medical staff for general service*.

(b) *Prisons and managers serving in ships or at headquarters who are considered unfit for general service*. In those cases when the surveying officers are not able to form a definite opinion without sufficient time to watch the case, hospital treatment should be recommended and the patient brought up again at a subsequent survey.

(c) *Men belonging to the R.F.M., R.N.D., R.N.V., R.N.A.S., R. Reserve and prisoners in custody, who are admitted to hospital for treatment of various illness or injury sustained during the period of leaving any of considerable amount, to be provided with ordinary cases of men from the fleet*. Separate forms B 111a should be rendered.

(d) *Men who apply in to engage to complete time for persons but who are retained in engagement on medical grounds*. If however their condition has further worsen is provided by a medical officer to be due to unreasonable refusal of medical, dental or other treatment which would have rendered them fit for service, they are not to be brought forward for revailing, but are to be discharged in the usual way of common service expired.

(e) *Special Service Men, who on the expiration of the active service portion of their engagements are found medically unfit for general service or, transfer to R.F.M. are to be provided*.

(f) *Prisons to be discharged or discharged by medical staff are not to be provided (A. 3. and A. 1. Article 1076)*.

*Overseas*.—Prisoners sent to hospital in offenders are not to be brought forward by survey without the special direction of the Commanding Officer. When such authority is given a separate Form B 111a is to be rendered and any necessary certificate given by the surveying officers.

#### COMPLETION OF FORM D 146

In preparing a case for survey with a view to revailing, some cautions are: Careful history of the medical history. That will include the man's own statement, more particularly on Form D 146 (Question 2, and steps should therefore be taken to verify his claims by reference to his commanding officer and medical officers of ship or establishment relative to his claim.

The medical history sheet should be marked as belonging to the patient,



an error—this is done owing to it being that of another writing, it would mean.

If the medical history sheet is not complete, reference should be made to the Medical Department for completion there from records in the medical officers' journals of symptoms which the case has served. There is of particular importance in history of venereal disease injury or transmissible disease.

Any circumstances which is claimed by the patient to have been constant, or to have influenced in any way the onset or course of his disability, or which is considered to have any bearing on the disability, is to be carefully investigated.

In all cases, whether a claim is made or not, the full history of the case and the possible causes of the disability are to be investigated, and the individual given the benefit of any doubt which may arise concerning the relation of his disability with any unusual circumstances or debilitating conditions of the man's service.

The investigation can be practically every estimate be made by medical officers in charge of the case before a rating is brought forward for review. If the review and confirmation obtained of the facts described, a full account of work can be given to the Medical Department of the Admiralty.

Obtain carefully the Notes to the various paragraphs in Form D 145. Questions 10—If possible, only one disability causing invalidity should be asserted. If there is more than one, the disabilities should be asserted in order of severity.

The disability should be definite, not e.g., "Defective Vision" or "Deafness" but e.g., defective vision "simple Myopia," "astigmatism (both eyes)" or damage of ear "Chronic, Suppurative Glue Media (both ears)".

Questions 11 and 12—Definite answers if possible.

Question 13—All that is required in this paragraph is a concise, past history of the existing disability, i.e., its onset and course up to the date of admission to hospital, together with such history of any other disability bearing on the case for which the man is brought forward for review.

It is therefore unnecessary to copy out the medical sheet in full on this, many of which may have no bearing on the existing disability. If it is the fact, it will be sufficient to say "Service records show no disease or injury relevant to the existing disability." All the medical history sheets are available in the Medical Department and are maintained there together with the Forms D 145. It is also unnecessary to copy out the man's own statement in D 144b, but when this statement is irrelevant or unhelpful, as is often the case, a short "Patient's own statement" as its history should be included, and a note made whether it has been verified or not from the medical history sheet or other service records. It is, however, very helpful to have a statement made on the claim put forward by the man on D 144b, which can be made appropriately in this paragraph or in paragraph 14.

Question 111—This does not require further record at Bureau, is it not?

Sub-paragraph (c) should be amended to reading: (c) present will meaning "present" and sub-paragraph (d) reading: (d) before and meaning "since." The word "the" should be inserted under (b) and (d) as the new way (b) supports the sub-paragraph mentioned—e.g., paragraph 11 (a) (ii) "Yes, the remainder can be taken off. If the disability is not considered due to any of these causes under (a) (ii) or (iv) they should all be taken off." When the answer "Yes" is given a short note should be added to show the reason for the decision—e.g., "Injury on duty, rule II C 303328" or "Exposure, rule format, and give details at the bottom of the page" or "Direct contact through an act of duty, rule details below." (See corrected facts and instructions, 32.)

Sub-paragraph (v) also presents difficulties in carrying others in the words "service" and "manner" especially in unusual cases. The difficulty need not arise as, if the disability is caused by "man's own negligence" as it is stated in query "Yes" under (a) or (b) or if the wording of the question is objected to from an author's point of view it may be changed to "Inexperience."

Direct evidence of infection or a previous history of venereal disease in the cases must state a "Yes." When there is no record of previous disease or infection "evidence of probability" must be the guide (e.g., syphilis and its sequelae) and a note made to that effect.

There have been instances of men credited (or given) rheumatism with the medical history sheet covered with entries for gonorrhea, and "No" entered against the query.

"Aggravation" also presents difficulty. When this is awarded a short note as to the reason should be added in the same way as a similar note for "attributable" has been collected. If the aggravation is considered to prove as its amount to "attributable" put "yes" under attributable column (d) adding the words "aggravation in the extent of attributable." If the amount of aggravation is not so great the percentage amount of aggravation out of the total percentage of disability must be stated.

Question 142—This need only be filled in when the answer to paragraph 141 is "No" and it will be followed to fill in "constitutional" for disease, or "injury" if it is so.

Question 95—This entry is very important in that it depends the answers to paragraphs 99, 11, 21 and 24. What is required in this paragraph is a very brief but complete short picture of the present state of disease. It is not necessary to fill the space with records of physical signs in detail. A brief statement should be given which will enable a person reading the account to form an opinion of the present extent of the disability and (most important) the future course of the disease, that is, where it is possible, an expression of opinion should be given as prognosis. It is probably not realized by surveying officers that whatever statements they

and still in paragraph (3) it is referred to the Medical Director General of the War Office Committee on Awardment. In attributable cases the necessary steps for pension (pay) can be secured if necessary by subsequent recovery, but in 50 per cent. or over cases it is, as a rule, months, but in non-attributable cases, and in attributable cases below 50 per cent. assessment, a final permanent assessment has to be made in the Medical Department for a gratuity to be given. This assessment is sometimes extremely delicate and for this reason a good description of the disability and its probable course in the future by those who know the case is of the utmost help. Surveying officers should also remember that if details of the physical signs, etc., are required in the Department they can always be obtained by obtaining the full notes from the hospital but surveyors. For example in a case of pulmonary tuberculosis the facts required are:—

- (1) Extent to which the lungs are affected
- (2) Whether curative or permanent
- (3) Whether case is progressive, quiescent or definitely breaking
- (4) What signs of tubercles are present e.g. temperature pulse respiration, weight progressive weight loss, etc. should always be given and if present in too ill to be weighed this should be stated, haemoptoe, and whether tubercle bacilli are still present in the sputum or not.

A short x-ray report is valuable. Many of these leading points of course apply equally to other diseases and these special signs should be included and a note made as to general condition.

In compensation cases such as loss of part of a limb it is not sufficient to state—e.g., amputation through middle of thigh. The site of the amputation should be noted according to the schedule of assessment given in C.D. 365. In amputation of upper limb it should always be stated whether the extremity is right or left handed. In all cases of severed disease the results of the Wassermann reaction in blood and an abnormal fluid are to be entered, and if for any reason the test cannot be carried out it should be so stated.

Questions 16 and 17.—These are clear but under 17 (a) the reason why it is 'unreasonable' or 'reasonable' should be stated—e.g., if 'unreasonable' it should be stated 'operation is not likely to avoid maiming' or if 'reasonable, state 'operation would avoid maiming'. This clause very frequently is relied on for bonus or gratuity.

Question 18.—This is clear.

Question 19.—This is important and should include only other diseases which would not cause maiming. A minute description of the actual disability is required. If the disability is the result of injury it should be stated whether it was received on duty and where and if a Court Certificate has been granted, the date and source of origin should be stated. In disabilities other than disease or injury, the man's own statement

should be inserted not within seven days. Further, the disability should be returned as attributable to — suggested by the Service or indicated there. If the fact of the injury should be stated. The degree of disability should also be stated by the Board of Service and filed as a claim. It should be a general degree of disability should be made especially in cases of injury or disease attributable to the Service. If less than 50 per cent, it should be definite figure to be stated which may be any figure from 1 to 19.

Question 25 (a) (b) (c) (d) — These should be left for the Board of Service to be decided.

The answer to Question 25 should be "Yes" or "No." If it is "Yes" and the assessment given under 31 is less than 50 per cent, then the exact amount of disability should be expressed in any figure ranging from 19 to 1.

That to Question 25 (a) should be definite, such as "twelve months" or "about twelve months" or "more than twelve months."

Question 31 — This is obsolete as Form 1241c has been abolished.

When answers to the questions on Form 1241c are written or typed into them by the medical officer in charge of the case he should carefully read the form to ensure no omissions before it is submitted to the reviewing officers. This is very necessary owing to the fact that technical words are frequently mis-spelt.

Section 64 Part II (a) (b) (c) (d) (e) (f) has been changed to bring a ruling forward for review with a view to amending. This form should be given to the man to fill in his claim regarding his disability, the nature of which should carefully be described to him by the medical officer in charge of his case. Frequently the medical officer does not know for what disease he has been disabled. When he has made his claim it is the duty of the medical officer to read it carefully and to make at once any amendments necessary to verify or improve the facts. Reference should be made to the medical history sheet. If details are lacking reference should be made to the Medical Department for any details that may be available on medical officers' journals of ships in which the man may have served. Further a list is being made that the man has served and contained his duties or duties, under heading or exposure, reference should then be made to the commanding officer of his ship or establishment if possible to verify the above.

An entry entered in an act of duty performed within the premises of Naval Establishment is suggested as attributable provided it is not due to the man's negligence. This includes e.g., taking a hospital to go to in performance of an act of duty and meeting with an accident whilst within the premises of a Naval Establishment.

Claim for a First Certificate which is not present is often made, and attention on this point should be made at once. But never a real amount of work for all concerned subsequently.

The Board of Survey should carefully consider this claim on Form D 1414 and make a note that this has been done, and whether the Board considers that the claimants put forward by the man have any bearing on the disease or injury for which he is being awarded.

The completion of Form D 1414 has been described somewhat extensively for the good reason that if it is not properly filled in both by the medical officer in charge of the man and by the surveying officer a vast amount of trouble and investigation by those who subsequently deal with it will be saved. It will also prevent further claims by returned persons such as relatives which are difficult to refuse after lapse of time. The Forms D 1413 and D 1414 are not only confined to members at the Medical Department but are seen by other Departments of the Admiralty, such as the Assistant Director of the Navy and may be mentioned by any individual member of the Board of Admiralty. This frequently happens when claims for compensation come after revoking and are the subject of questions asked in the House of Commons.

Before proceeding with other surveys it may not be out of place to refer to a few points of general interest as regards ratings who are or may be awarded.

**Time Expired Allowance.**—Any naval rating or member of the Royal Naval Reserve, who is discharged as a patient, or as a patient of the period of hospitalization, may be awarded until he has recovered from his illness and is discharged from hospital, earned remuneration as awarded. Therefore certifying that a man's service has expired he can still be brought forward by revoking.

**Questions asked by the man awarded.**—Ratings awarded frequently ask questions before leaving the hospital concerning pay, gratuation, pension after treatment and how they stand as regards the National Health Insurance and Unemployment benefits. The following brief remarks will enable most questions to be answered.

**Pay.**—Men and boys awarded as discharged patients, from a home hospital, will be entitled to pay and allowances for twenty-eight days from the date of actual survey. Leave allowances are payable during this period except when the man is recalled. Payments who are serving on further engagements are not eligible for this benefit unless revoking is due to recovery.

**Pensions and Gratuations.**—The question of pensions and gratuations is settled by the Admiralty but the following remarks extracted from the regulations will generally afford sufficient information.

Men awarded from H. M. Service on and after October, 1911, may be granted compensation at the discretion of the Admiralty. When the disability is due to negligence or misconduct on the part of the man such compensation may be withheld or awarded at a reduced rate.

Pensions are divided into two parts—viz., Service Element and the Allowance Element, but the latter is only paid to men awarded for a disabling warwound in the Service.

Men disabled with less than five years service and over are entitled to a pension for service years more with five years service reckonable.

Men discharged with less than the qualifying period of service required for the award of a Life Pension will be eligible for the grant of a pension of £1 plus an additional £5 for each ten years of disability in excess of 20 per cent, on receipt of each completed year of service.

**ARMED TREATMENT, TRANSPORTATION.**—Servicemen brought into action are included among the benefits conferred by the National Health Insurance Acts. Joint Tuberculosis Committees or the councils of counties and county boroughs are responsible for the provision of residential treatment for an Armed man. When a tuberculosis invalid is discharged from the hospital a notification in duplicate (M 102) is forwarded to the Ministry of Health who in turn informs the Medical Officer of Health of the district in which the man is going to reside.

Arrangements are then made by the Tuberculosis Officer to ensure the man and to recommend the appropriate form of treatment. Cases have arisen in R.N. Hospital Plymouth, where it has been considered most advisable that the patient should not proceed to his home. Each case of this kind is notified to the Ministry of Health and arrangements made with Medical Officer of Health of the district concerned to transfer the patient direct to a sanatorium.

**VACCINATION.**—Men suffering from venereal diseases are liable to be treated by order of the Ministry of Health Form V 10a, which is to be carefully filled in (Authority, A, K and A 1 Article 1481).

#### VENEREAL DISEASES AND UNEMPLOYMENT BENEFIT

The application of these benefits to venereal disease ratings is fully explained in Admiralty Fleet Order 214/32. As regards National Health Insurance the Admiralty payments provide an insurance against sickness on return to civil life. On discharge a medical man should apply to the Clerk of the local Insurance Committee set up in the district in which the man resides in order to be placed on the panel of a doctor and thus obtain any necessary treatment.

Boys of the age of 15 and upwards, included from the Service and resident in Great Britain or Northern Ireland, are eligible for Unemployment benefit under the general conditions applicable to the payment of such benefit. Unemployment benefit will be paid to the claimant, given no disqualifications by the Ministry of Labour.

The method of recording and disposal of venereal has not been dealt with as it is understood that the regulations governing these cases are under revision.

The following remarks regarding the recording of venereal cases may be of interest.

## ANESTHETICS, 1900.

**ENTRANCE TOLLS.**—Ships are retained in the dry-dock until the stowage is looked at. They are then sent to Queen Mary's Hospital, Washington House, to be fitted with an artificial limb. When the fittings are fitted and the stowage is ready for dispatch, everything is arranged by the Medical Director General of the Navy.

**NON-REPARABLE CASES.**—Men are to be retained in hospital until the stowage has looked and are then to be embarked at the next fortnightly survey and discharged to their homes as soon as they are fit to travel, pay being awarded for twenty-eight days from the date of medical survey. Application may then be made to the Medical Director General of the Navy for the supply of an artificial limb as an act of grace on the part of the Admiralty. If the provision of an artificial limb is approved the Medical Director General of the Navy will make the necessary arrangements for its supply by contract, after the man's arrival home as soon as the stowage is ready for fitting.

**CLAIMS FOR DAMAGES.**—Rule 6, S. Article 1960 and Appendix Navy List, page 171 para. 4. All disability allowances made in accordance with the above regulations are referred to the Medical Director General of the Navy for concurrence or otherwise. A table of specified injuries in C 81 900 is useful for guidance. The description of the present condition is frequently very meagre and makes assessment difficult with terms as "old injury leg," are often used. It would not appear to be generally appreciated that compensation can only be granted in respect of the degree of disability prevailing at the date of discharge.

The term "less than twenty per cent (20-0)" should not be used; the actual degree assessed should be stated and need not necessarily be an multiple of five or ten, such an assessment as for example seven per cent. (7-0) is quite possible. Degrees above twenty must be in multiples of five; such assessment can only easily be held in most instances in a rating who has been able to carry out his normal duties up to the time of joining.

**REMARKS ON FORM D126.**—These surveys are of the utmost importance and often involve a lot of departmental correspondence. They are usually made for cases under the Workmen's Compensation Act or on men who have accepted the Admiralty Scheme of Compensation. They are subjected to close scrutiny by the Accountant General and later the Treasury, who may refer them to the Principal Medical Officer. The final decision in these cases rests with the Treasury after consideration of the reports forwarded. What is appreciated that a medical officer who has actually seen the case is in the best position to sum up the degree of impairment these men are frequently referred back to the Medical Director General of the Navy for confirmation, amendment or comment, and it is sometimes difficult to form an opinion. Errors which have been noted are—

(2) In general, *total amputation* of the part in question is not necessarily indicated.

(3) In almost all cases it is made for the nature of a man's employment. To quote a recent case, a man who had been discharged from hospital after treatment for a fractured leg was assessed under the words "incapacity" and apparently affected, but under Question 3 it was stated to be "temporarily fit for voluntary or clerical work only." It is probable that as he was a general laborer such incapacity would not be amenable and further if it were he would not be qualified to do it. One provision for civilian employees is granted not in respect of the injury itself but in respect of *partial loss of earning capacity*.

So surgery on Page D 116 is frequently carried out at naval hospitals and has subject to confirmation by the Medical Director General of the Navy. A detailed description of the present condition is essential in estimating the degree of incapacity. This is particularly necessary where a *retention of amputation* is made, such a retention is inevitably the subject of an appeal against the award.

#### REPORT OF SENIOR SURGEON, DIRECTOR OF SHIPBOARD MEDICINE PAGE D 116.

QUESTION 1—It frequently happens in cases of old men that they are weak in suffering from an appreciable disease. A few notes as to their *whole condition* would be of great assistance.

QUESTION 2—This should always be carefully investigated and if suffering from the disease with which credited a note to that effect is of value. In cases where a *Heart Certificate* has been granted this should be noted. In cases of *defective vision* it is of great assistance if the nature of the defect is noted and whether he would be improved by the use of glasses and the nature thereof. In terms, whether controlled by a *tear* and if so then it is noted whether the *tear* would be controlled by so doing or whether a special type of *tear* at all would be an advantage to the patient. If *suppuration* occurs, whether an artificial limb would be of assistance.

QUESTION 3 1 and 2 should be filled up always.

QUESTION 4—The answers to the question are important. If the answer to the question "Is he permanently and totally incapacitated from contributing to his own support?" is in the affirmative, the second part (a) (b) and (c) should be left blank.

It happens at times that a man is assessed as (c) or "continually" due to the misunderstanding of the question, and such an applicant is assessed therefrom wrongly as "materially" unable to contribute to his own support, whereas the question to be answered is "Is the applicant able to contribute to his own support?"



Any further notes on these cases are of the utmost importance to all those dealing with such cases.

In conclusion I wish to acknowledge most gratefully the valuable help I have received in writing this article from the Deputy Medical Director General (Surgeon Captain R. W. D. Hall, O.D.E.), Surgeon Commanders Kenneth Hale and Leroy Smith, O.D.E., and from the Secretary to the D.S. Hospital, Plymouth (Captain Arthur Harford, D.M.).

#### STATISTICAL REPORTS OF THE HEALTH OF THE NAVY WITH SPECIAL REFERENCE TO THE EXAMINATION OF BOOZING

By ROBERT CARRINGTON E. H. KENNY

A review of the Statistical Report of the Health of the Navy and a comparison of the 1925 Report with those of previous years, particularly that of 1914 and those reports so far remaining so, may affect these reports, have been the object in view when writing these notes. I have omitted the war years 1915, 1916, 1917 and 1918, and also the post-war period up to 1920, the conditions being unsettled during that period.

Taking a series of the more important diseases in the order of their frequency, we notice that in the year 1914 (1) Dysentery was the disease which held the highest position in regards the incidence recorded the figure being 941 cases with an attacking rate of 4.48 per 1,000. The total number of cases for that heading amount to 1,740. For the year 1925 the number of cases recorded is 411 with an attacking rate of 2.14.

Table I shows the steady decline from the year 1909 to 1925, the case rates as might be expected falling less rapidly than the attacking rate.

Taking the diseases which are particularly noted under the general heading, *Mentals* in the chief cause of the number of sicklings, the number being 54 out of a total of 134. During the year 1914 145 persons were recorded for mentals. The commanding medical officer's responsibility in these cases is emphasized owing to the fact that even in those with a recognized hereditary predisposition, the disease does not actually reveal itself in the absence of recent exciting causes, and it is largely a disease of opportunity.

*Mental* instability is responsible for two conditions. In later years it progressively includes consumption, whereas a recently introduced source of anxiety for the commanding medical officer is found to be a disease of adolescence, having as some symptoms a prolonged prodromal stage.

Carded summaries of the under movements and hospital returns are helpful in drawing out of each case. In examining records on campolife, a list of occurrence of the signs and loss of pulmonary contraction for campolife may give the most common signs of campolife disease.

*Spelling* shows some misreadings. It requires straightforward history, which is usually very forthcoming. The other serious diseases, which are reported under the heading of the preceding figure. One person was recorded for campolife, which should be an unusual case.

*Locality*—In 1914 the disease was under the general heading of mental disease, and was not considered as a separate entity in the general report. Under the report on diseases, the three cases were recorded for campolife. In 1915 campolife is responsible for twenty misreadings, the prevailing rate being 9.21 per 1,000.

The condition affects occurring in one report only, and that is where a positive family history is available. A case of this kind occurred a few years ago and the disease arrived at was that each case should be considered as an acute, and the direction of the remaining officers should be used to describe the disease of each case, showing that a certain amount of risk has to be taken in all cases (see Table II).

(2) *Tuberculosis* (Table II) in the year 1914, caused the second largest number of deaths, namely, 285, showing a rate of 3.46 per 1,000 as against 1.59 for the previous five years. In 1915 tuberculosis deaths, as a group, amounted to 161, with a rate per 1,000 of 1.94, as compared with the rate of 9.21 per 1,000 for the previous five year period (see Table II).

The figure shows a slight decrease from the year 1909 to 1917, especially in the case of the per 1,000. From a statistical point of view it is most difficult to discover early tuberculosis of the lungs. The medical officer has to depend on the general condition of the individual. As regards the family history, which in most cases is available, it is a most point within importance should be attached to it, and the medical officer's attention must be used whenever a positive history is available, always bearing in mind that he has a great responsibility to the condition as well as to the service.

In *General Captain John A. David Hyatt*, a study of 86 pulmonary tuberculosis cases shows that in 42 per cent there is a history of cancer preceding the onset of the disease. Prophylactic antitubercular vaccine in those who are subject to cancer cells might have a marked effect on the incidence of pulmonary tuberculosis, at any rate it is not likely to be harmful even if it fails in some cases.

(3) *Disease of the Circulation, Heart*—In 1914 the heading, which includes angina and functional diseases of the heart, shows a prevailing number of 267, with a rate per 1,000 of 1.97 as compared with 1.45 for the previous five years.

In 1915 the number recorded from this cause was 124, with an prevailing rate per 1,000 of 1.26 as compared with 1.45 for the previous

postoperative period. The deaths over the whole period from 1907 to 1937 is tabulated as following in Table III.

Taking the PMT Report for septuagint heart disease, we find that seventy-one cases were included, showing a case rate of 1.61 per 1,000 and an mortality rate of 9.93. Forty-two of the septuagint were under the age of 21. It would be interesting to know how many of these had a history of rheumatic fever before or after joining.

In the case of insutational heart disease, eight cases were included out of the Service, showing a case rate of 0.99 and an mortality rate of 9.15 per 1,000. Of these cases were under the age of 21.

These figures, in view of the ages quoted, present a formidable challenge to the recruiting medical officer, and it can well be imagined that the examination of the heart requires special care and is fraught with many pitfalls. I therefore propose to put forward here some of the physical signs which may be of assistance to medical officers in their judgment of cardiac fitness.

All kinds of candidates come before us but none ever complain or give any history of previous rheumatic attacks, so that we have to rely mainly upon our own observations.

Tachycardia.—"Is primarily healthy men seldom exceed the pulse-rate very easily, a persistent rate of 120 or even 140 during a single and brief examination has very little significance." ("Soldier's Heart and Other Syndromes" by Thomas Lewis)

On this authority we are bound to accept the statement, yet we must not altogether ignore the suggestive signs of cardiac disturbance. In my own case I make it a point to count the pulse early in the examination, and again after exercise, and finally, if well as desired, after the candidate has completed his drawing and is ready to leave. I very often find that when the pulse is high at the commencement and during the examination, it drops to the normal when the candidate has been through the drill, and thinks that everything is finished. Should such an abnormality occur and on the absence of other signs I attribute the high pulse-rate to nervous and pass the candidate." (14)

The effect of exercise has an important bearing on the pulse-rate, and of a high rate is associated with normal pulse, rapidity of respiration, redness and sweating palms or visible perspiration on forehead or chest, such and all of these signs are common and the candidate should generally be rejected. Features of the hands and thyroid enlargement should be noted in connection with a rapid pulse.

Occasionally you get an ideal candidate in all respects with the exception of the tachycardia, and it is then most difficult to decide. Tobacco causes and other causes may be causes of the tachycardia, but I can remember that tachycardia per se if not extremely high, should not, as a rule, be a cause of rejection in an otherwise very desirable candidate.

In judging these cases I am assuming that the rhythm is undisturbed

and that the test period being significantly affected in proportion to the sagging of the pulse. There is danger that if a candidate has undergone the strain of a whole day's continuous service in the testing of a machine I should not consider him a candidate fit for the service. In a normal heart the lower value of beats and not period remains constant without showing the tendency of the contractions.

*Respiration*.—A rate of less than 20 per minute is generally to be regarded as a sign of weakness.

*Irregularities*.—At any stage of examination should cause repetition. The only exception being the occasional sinus arrhythmia, which shows increase and decrease during respiration. Exercise greatly disturbs the cardiac.

*Electrocardiogram*.—In the absence of an orthocardiograph the position of the apex beat is the only reliable sign of enlargement. How much latitude should be given in construction of this condition? I make it a rule that if the apex beat is  $\pm$ , the maximal impulse is inside the nipple line provided that the nipple is normally situated, the amount of enlargement is not to be seriously considered. But the apex beat must not be below the level of the fifth intercostal space. If the maximal impulse is outside these limits there must probably the enlargement is such that repetition of the candidate will S.B. be.

*Listening during examination* is a rare occurrence and in the absence of any signs of disease, not to be considered a cause of repetition. Here again, circumstances must influence the opinion. One example of a boy has travelled a long distance, and has had on foot some ten early breakfasts and has had to get through an educational test and has had a long way to come before examination and is then wheeled into a warm room with several other candidates it is not surprising that occasionally the examination goes very much like this and further takes on as a result. There is also the long suppressed gastric pressure, which in some cases has an important bearing on the candidate's physical state.

*Murmurs*.—The real significance of cardiac murmurs is not fully understood or fully understood even by experts. To say that hearing a murmur has a cardiac heart that he has cardiac disease has been proved to be incorrect. Certain murmurs indicate organic valvular disease, others have little or no importance, have a progressive point of view. The time has passed when men were revealed out of the Service by reason of cardiac disease because they happened to have a heart at the time of apex. But at the same time it cannot be denied that if a man has a cardiac heart and knows it, he is well on the way to being revealed if he is weak. Usually on the routine examination of the heart, we look for the following types of murmurs which are here arranged in the order of frequency.

*Cardiac Respiratory*.—This type is present in a large number of normal people, especially after exercise. It is best heard at the apex and is often conducted into the axilla. It is rather high pitched in character and

and its movement the respiratory tract. It is usually found when respiration is inhibited but it does not always disappear then it needs careful interpretation before it can be put definitively to rest. I don't remember just at what its value is not a good expectation and its recording value should be practically lost.

Pulmonary systolic should be noted as being highly dependent from a standing point of view. It accompanied by a third the reduction is pulmonary disease. From an standing point of view its significance is limited and the prognosis should not be influenced by its presence.

Left Systolic is more under the same category as the pulmonary systolic, its prognostic value being nil. From a standing point of view, it should be regarded with suspicion and a useful comment made from a third and fourth level. This measure is more of auxiliary use is only rarely associated with a lesion of the aorta (Loring).

Apical Systolic Normal systolic pulse respiratory conditions should be noted. From an standing point of view a history of rheumatic fever should not be to the credit or discredit of this measure. It should be noted in the recognition that almost any type of heart can be found and no heart can be found at systolic with the normal value or range, and also that the value may be defective in the very patient and no heart can be detected (Loring). The difference between an acute cardiac and an old cardiac heart is important, but it is most difficult to differentiate between these measures and even the greatest expert can be deceived in this field of investigation.

The extent of aortic valve disease which produces a systolic murmur close to right, the value is uncertain. (Loring)

Tricuspid Systolic Murmur may be present in health after strenuous exercise. I have never seen across the particular manner of occurrence. If present it should cause rejection.

Doublet's Murmur—Always reject.

To sum up, the only heart which should be regarded as unimportant is the examination of aortic in the mitro-systolic and also and when it disappears on respiratory suspension.

Blood pressure usually being necessarily recorded in a standing posture but it may be useful in cases of suspected early aortic disease. A persistently raised blood pressure at rest is in general a sign of ill-health.

Exercise Test—The main object of the exercise test is to measure the cardiac efficiency; an refusal to do response to work. The importance of above tests cannot be too carefully repeated as the increasing medical effort as there is no other reliable guide to the cardiac output. Practically any form of exercise will do but it must be noted, simple and working.

The test, recommended in the Rotating Insurance for the Royal Navy and Royal Marines will answer the purpose in ordinary cases, but in doubtful cases more accurate tests must be applied.

The nature of the pulse rate in the normal after exercise is an important

from 15 million soldiers). Two million soldiers, out of the 1900 primary conscripts, were lost.

(c) *Increased* (i) *eye loss*—In 1911 there were 115 cases recorded under this heading, showing a ratio of 0.96 per 1,000 compared with 1.36 per 1,000 in the period 1907 to 1910. In 1911 the return shows 283 cases recorded with an increasing ratio of 2.07 for the period 1922 to 1925, taking account of period, so however the ratio for recording has markedly increased.

The reason for this increase may be due to the fact that, with the advent of light microscopy, the nature and extent of eye disease and particularly cases of refraction became more evident and several things occurred accordingly.

For example, in 1914 the number of eye cases returned was 1,190 with 176 recordings whereas in 1927 the number of eye cases reported was 853, and the recordings rose to 542. In the former case we find one recording covering 8 cases and in the latter case a group 5.7. In the latter the ratio rises per 1,000 is of course, as it shows very wide variation for the whole period 1907 to 1927 (vide Table V).

Taking a rough survey of the particular causes of the high recording figure we find that 228 cases were recorded the causes of refraction made up as follows:—

Myopia uncorrected	92
Hypometropia uncorrected	54
Mixed astigmatism	35
Hypometropia	99
Myopia	13
Strabismic (not designated)	11
Total	213

Only three recorded were under the age of 30 years and 115 were under 16 years.

Can these recording numbers be reduced by more careful examination of the eye prior to entry? Under the present increasing regulations the candidate is required to read the Snellen's last type at various distances, and different standards of vision for these types are laid down for different grades of the Service. These tests do not make any allowance for such cases of refraction which may exist but are not apparent in the increasing medical officers, or the absence of a more complete examination on the dark screen.

I have from experience that it is possible for a candidate to fail to read up to the standard of full normal vision when asked to read the types and still have a normal vision of refraction. On the other hand, a few have proved clearly that a person can read the types to the normal standard and still have no error of refraction.

The problem therefore is, are we going to pass in a candidate whose

mean is 10 by Bevington's types, but who has an extra of selections, or are we to (right) a candidate with whose selection is correct, who is unable to come up to the required standard when asked to read the test types? This is not a simple matter and requires further investigation.

Full normal vision is required by certain branches of the Service. What is meant by this? If a candidate reads correctly we cut of the score letters in the test, are we to consider that he has full normal vision, or does the fact that he has been wrong on one letter mean his eyesight? Government power is given to find examining officers in these cases, and it is sometimes most difficult to come to a satisfactory conclusion. I think that eventually it will be necessary to carry out examinations in all cases.

Dysmetropia is a mean of 17 per cent of requiring for vision of re-lection, in the examination it might be profitable to make use of the equipment when examining recruits.

Myopia gives a lower number in the existing record for the simple reason that it is most easily detected by the test types and less myopes get through than other types of vision.

Hypertropia comes next to myopia, in order of requiring, and it should be known to mind that hypertropia becomes presbyopia at an early age. At the age of 47  $\pm 3$  D. hypertropia becomes presbyopia and requires a  $\pm 4.5$  D. lens to bring his amplitude of accommodation to normal (Cummings and Werner).

The mean at the age of 45 has an amplitude of accommodation of 15 D., which rapidly decreases with age so that accommodation is more likely to become evident in the elasticity of the eye and the power of accommodation decreases. Considering the question of working for vision of selection marks the enquiry as to what percentage of all adults are really myopes. I have no information on this question, but I should suppose that the figure is very small, particularly with regard to some categories of vision.

As the present time about 75 per cent. of candidates who come up for examination are rejected, and vision of selection forms a high proportion of these rejections. With a more searching eye examination the per cent. age of rejections will certainly increase up depending on the degree of error which is just deemed as a minimum. Probably it will eventually be discovered that the percentage in eye glasses will be the best solution of this problem, and I believe that it is already now under consideration for eye examination.

The same matter should eventually be tested not only with a type of examining process, but also to help in detecting myopic-like eyes and myopic-like eyes.

Colour Vision.—The Edinburgh Colour Test is still the chief method for colour vision testing but a recent book called "Tests for Colour-Blindness" by Ichabane, should be considered a supplementary test when the candidate's colour vision is in doubt.

(2) *DISEASES OF THE DENTAL ORGANS* (Table IV).—Table IV shows the morbidity and case rates for the period under consideration. It should be noted that on the 1927 Report because of the death and gross case under a separate heading and may reduce the case rate for these diseases. There are two points affecting increasing here, one is the inclusion of the tonsils and the other the dental conditions. With regard to the former, the number of enlarged tonsils met with in recruiting is considerable. Taking a hospital system examined recently it was found that 55 per cent. had enlarged or diseased tonsils. In the hands of an expert the percentage would probably be increased. Candidates with moderately enlarged tonsils are to be rejected but the medical officer is allowed discretion in passing them; candidates who have had tonsillotomy satisfactorily performed are the lowest of the list, but in practice one has to pass a number of candidates with, to say the least of it, suspicious tonsils, and I am not aware that it leads to any untoward effects in later years of service.

The dental condition of recruits is well looked after in the prevalence and if there is any doubt the candidate may be passed on subject to further dental examination on joining.

(3) *DISEASES OF THE THROAT OR PHARYNX* (Table V).—A steady decline in the case rate and morbidity rate is noticeable here although the morbidity rate is not keeping pace with the case rate. Improved diagnostic methods and improved treatment probably account for the reduction in both cases.

Glottis refers to a group of conditions in laryngitis. Officers are under the age of 35 years and 145 under the age of 25 in the 1927 Report. The loss of the recruiting medical officer in his examination of the voice is simple and definite and may be stated briefly as follows: There should be no fitness of discharge from the nose, the tympanic membrane should be intact and the larynx perfect. The microscope should be used in all cases. Particular attention should be given to the condition of the wall in the case before spraying. If it shows signs of softening or is of a whitish colour or is wet swelling, it is highly probable that there is disease and the ear should be sprayed out and other investigations sought for. The membrane of the ear should be carefully examined for perforations, old malarial and infectious patches, any of which should cause rejection.

When a medical inspection has been performed as evidenced by a post-operative case, the candidate should be rejected. In this connection, I ought to mention that in very exceptional cases (e.g., 1 case with Hospital School boys) I have passed boys into the Service with a history of successful medical operation in early childhood, but the membrane tympanum must be whole and the larynx perfect, and there must be no existing disfigurement of it in the nose or otherwise.

A reduction of the membrane tympanum indicates a marked condition of the tonsils and nasal overgrowth of the latter condition should be made.



*As in cases 1916, 1917, 1918, 1919 (Table VIII) — A combination of 10 minutes of the 10-minute system on scale Table VIII. The combination of these 10-minute test-steps is considered to become high test 1917, but the resulting value tends to go up. In 1917 instruments 1. Under tests responsible for extensive cancellings out of a total of eighty-two for all diseases of organs of locomotion. The actual number and diseases are as follows, viz. —*

Flat planes	10
Flat nose	1
Bitten vulva	1
Monomelic	1
Edema nose	1
One dropped shoulder	1
Varicella	1

Total — 16

For planes would not be an anything disability. Here we have a new chance in which with supplementary planes is given to the examining medical officer. The "hopping" test is most useful in detecting a weakness of the ankle, which seems to be the deciding factor in these cases. The difficulty which arises is that, if a candidate is passed fit with any degree of the test he may subsequently use this disability as a lever to get out of the service. During the Great War at the Naval Service at Chatham, a large number of men complained of flat feet, and some of them were passing over but in those days we could not afford to lose the services of highly skilled individuals, and very few of them ever came before a Board of Survey. They were recommended for duty in destroyers, submarines and all types of small craft where their weakness would give them the least amount of inconvenience. This state of affairs does not apply to present time needs now and you cannot appreciate our present system with the flat footed personnel of the fleet.

Other disabilities to be noted under the heading are joint valgus, spinal curvature and hammer toe. A severe degree of spinal curvature is passed on a large number of recruits and I believe that it rapidly shows up under Service training and conditions.

These valgus should cause rejection in all persons under the age of 27 years over this age slight degrees of knock-knee should be carefully considered before the candidate is passed fit.

Hammer Toe—Report of the nail is walked on.

Valgus valgus and Valgus valgus—Report.

Wristalgia—If there is any tenderness over the heads of the metacarpals which will become a violent on carrying out the "hopping" test, the candidate should be rejected.

22 Diseases of the Urinary and Genital Systems (Table IX).—For convenience of comparison these systems are grouped in one



This represents 560 candidates passed B1 without blanching out of a total of 1313 examined.

(21) It should be noted that the number examined does not represent the number who presented themselves for examination at the various examinations, as a good many were washed out for defective vision and dental deficiency, &c., by the various examining officers concerned and therefore did not appear for medical examination.

The causes of rejection were as follows:—

Defective vision	112
M.C.P.	14
Defects of ears	30
Defective vision + ears	39
Spinal curvature	34
Colour blindness	33
Osseous vulgus	19
Poor physique	15
Dental deficiency	14
Haemorrhoids	14
Old injuries	10
M.C.G.	9
Idiocy (T.D.)	1
Defects of skin	8
Vascular veins	8
Old operations	8
Mania	5
Bladder lesion	5
Undersized limbs	5
Hypertosis	5
Pyæmia	4
Overweight (obesity)	3
Tendency to hernia	3
Variety	54
	<hr/> 459

The causes of rejection shown above correspond fairly, separately with the characteristics of working with the exception of tuberculosis which is a cause of rejection in consequence.

Comparing briefly the remaining figures we find that defects of the eye, chiefly errors of refraction, are the principal causes of rejection and blindness. Defects of the ears were caused on the cause of myopia but and chiefly on the "matching test." Deficiencies of limbs are listed on the rejection test and fifth on the "matching test." Defects of the ears are fourth on the rejection test and second on the "matching test."

These results are not a great advance on what has previously been observed but they emphasize the fact that our problems do not tend to get less as time goes on and the computer may have its work as well as attention to the existing state of affairs.

Surgeon-General W. H. Henshaw, the superintendent of the military services, one of criticism has been on naval hygiene. He refers to it as the first line of defense in preserving the health of the naval personnel, and it is possible that this line can be strengthened in various directions, but it would take several years of experience to test the efficacy of any further measures which might be laid down in the sanitary regulations, and so any such a serious amount of latitude must be given to the first commanding officer. I consider that all land commanding officers should be given access to the reports of surveys made by the various naval hospitals.

TABLE I  
Naval Diseases

Date.	Invaliding rate per 1,000	Convales- cent per 1,000	Number of cases treated
1890-91	0.54	0.65	—
1911	0.66	0.79	1,350
1911-12	0.66	0.81	—
1912	1.40	0.46	3,000
Intensity			
1899-1901	0.47	0.66	—
1911	0.54	0.55	57
1911-12	0.56	0.60	—
1912	0.31	0.77	12

TABLE II  
Typhoid Fever

Date.	Invaliding rate per 1,000	Convales- cent per 1,000	Number of cases treated
1900-1911	1.02	1.50	—
1911	1.26	2.19	108
1911-12	1.81	2.50	—
1912	1.62	1.90	169

TABLE III  
Diseases of the Circulatory System

Date.	Invaliding rate per 1,000	Convales- cent per 1,000	Number of cases treated
1899-1901	0.46	0.82	—
1911	1.09	1.60	978
1911-12	1.36	1.44	—
1912	1.26	2.21	1,100

TABLE IV  
Diseases of the Digestive System

Date.	Invaliding rate per 1,000	Convales- cent per 1,000	Number of cases treated
1900-1911	1.16	200.00	—
1911	1.54	76.79	10,260
1911-12	0.77	77.66	—
1912	0.74	58.50	1,600

TABLE V  
Diseases of the Eye

Date.	Invaliding rate per 1,000	Convales- cent per 1,000	Number of cases treated
1900-1911	1.36	7.60	—
1911	0.69	7.50	1,140
1911-12	1.84	7.30	—
1912	2.69	7.06	600

TABLE VI

*Percent Daily Consumption of Food by Various Species of Fishes*

Date	Yellow Perch	Catfish	Brook Trout
1900-03	1.00	1.00	—
1901	0.90	1.00	—
1902-06	0.90	1.00	—
1907	0.80	0.17	—

TABLE VII

*Food Consumed by Big Bass*

1900-03	8.0	7.0	—
1904	8.0	10.00	—
1905-06	1.0	2.15	—
1907	1.00	0.67	—

*Lower Classes of Species*

1900-03	0.0	04.00	—
1904	0.0	04.00	—
1905-06	0.00	0.00	—
1907	0.15	2.15	—

*C. Crispus*

1900-03	50	70.00	—
1904	50	11.00	—
1905-06	1.00	11.00	—
1907	50	50.00	—

*Brook Trout*

1900-03	0.00	00.47	—
1904	0.00	00.00	—
1905-06	1.0	00.00	—
1907	0.10	00.10	—

TABLE VIII

*Dietary of the Crayfish of Connecticut*

1900-04	0.00	00.00	—
1905	0.00	04.00	—
1906-06	0.00	0.00	—
1907	0.00	0.00	—

TABLE IX

*Dietary of the Crayfish and Gammarus Species*

1900-03	0.00	0.00	—
1904	0.00	0.00	—
1905-06	0.00	0.00	—
1907	0.00	0.00	—

# SOME COMMON POISONOUS FISHES FOUND IN SINGAPORE WATERS<sup>1</sup>

By GEORGE COMPTON B. RIDGLEY, F.R.S.

THE term "poisonous fishes" must be understood to comprise two groups: (1) Those that are poisonous to eat, and (2) those that are poisonous by means of stings, spines, &c.

GROUP 1.—Many fish in all parts of the world whose flesh is usually wholesome may become poisonous under certain conditions—for example, during the breeding season, or after they have eaten some particular article of food. In these cases the fish will tend to become more poisonous the longer it is left uncooked before eating: since the flesh, not of itself poisonous, will take up the toxins contained in the glands or stomach. The popular superstition that fish hung up in the moonlight overnight becomes "moon-struck" and unwholesome probably has arisen in the following manner: people have been poisoned by eating fish which has hung uncooked overnight, on some of these occasions there has happened to be a brilliant moon, and these occasions have been so impressed upon them, or on the minds of the uneducated fishermen that they have associated the two circumstances and found a satisfactory explanation. But there may be a more sound basis for the belief, inasmuch as it seems probable that the phases of the moon may have some relation to the periods of activity of the sexual glands, and at these periods of greater activity the fish may absorb greater quantities of the poison, particularly if the fish is left uncooked for the night. It is noteworthy that the Chinese, in their ancient wisdom, are very loath to buy a dead fish, however fresh. For this reason, in native markets the fish is almost invariably offered for sale alive or fresh, with the exception of species of the dried and salted category. I have even observed Chinese fishermen so particular in the selection of their catches as to reject fish obviously recently dead and found on having become ill. It should be a general rule in the tropics never to eat fish uncooked for future consumption. If this rule always observed it would be found that the number of species which are really poisonous would be greatly reduced. In fact, many of the so-called poisonous kinds are eaten with impunity by the natives by virtue of observing this simple rule. Perch, for example, rapidly deteriorate but may be made wholesome by hanging in brine as soon as caught. If kept on ice, they may then be safely eaten the next day (Baker 1922). On the other hand it is notorious that puffers and certain other fishes are poisonous to certain persons at all times and under all circumstances. In other words, the matter may be

represented by a parrotfish (or a whole lot of parrotfish) about deceiving the people—"these fish are poisonous to eat," if the people all the time, some of them are poisonous to all the people some of the time, and some of them are poisonous to all the people all the time."

It is with the latter group that we are principally concerned.

All scale fishes known described belong to the order Platycephali, which is divided into two families: (A) the *Soleidae* and (B) the *Gymnocephali*.

Example of (A) *Soleidae* (Fig. 1).—This type of fish is commonly known as "flounder fishes," "File fish" (on account of its tough sandpaper-like skin, devoid of scales), or "Trigger fish" because of its pronounced dorsal spine, which can be laid flat in a groove on the back, but when raised for standing purposes looks stuck in that position like a trigger. These fish are both poisonous and venemous. All the fish of this family



FIG. 1.—*Soleidae*

have very similar characteristics—shape very compressed laterally, very deep dorso-ventrally, mouth very small and containing a very few sharp teeth, sometimes so lined together as to resemble a parrot's beak, two dorsal fin with a strong spine and possibly a small membrane with one, two or three smaller spines, a long small dorsal fin, a small pectoral fin, a single ventral fin or anal with a spine and a single anal fin, gills are very small and without the usual operculum or gill cover.

The specimen figured (Fig. 1) is of a western dark purple color, and though it has no true scales the skin is stamped in a scale-like pattern. Though a few of the group have scales, the majority are without, as above colored in.

Fig. 2, *Ammarchius*, illustrates another example of the group.

A third example is the "Dory fish" *Gobiosoma*. These fishes are usually quite small, not more than six inches long and are living also in caves

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common. They are all marked in various degrees, and are probably  
 not all from the same source. The eggs are found in many  
 places, and are sometimes found in the same place as the  
 eggs of the same species.



Fig. 1—*Thalassoma*

surge wrasse, as and other with small spots and then almost white, they  
 are all very good specimens of a most interesting appearance.

Though some of the fishes above described are common, and are not much  
 to be feared, the group contains no fewer than very few specimens, and



Fig. 2—*Thalassoma*

it is more difficult to see the exception of all should be possible. The pattern is  
 that of the pattern to be seen in the skin, which is very dark and light  
 brownish, separated from the back. I have seen a few *Thalassoma*  
 and found it to be the same. I have also seen the same pattern in the





Some of the parents and I once went to a Malay lady. It was the past week or so, which occurred for the first unfortunate victims of the poison. The same woman also said, 'The Komar like it.' It seems probable that some of these victims is supposed to be a herbivore fish, so that persons are willing to take the risk of eating it in expectation of becoming healthy. This belief may be connected with another fact concerning the thoroughly unpleasant creature—that is, the habit of uttering hallooos or halloos while in the sea, and emitting a noisy hiss which becomes unpleasant. Moreover, its form is point of attack is upon the general course of the body, and is not directed by the Komar, in his hands as Malay persons. He also states that the danger of poisoning from the eating of these fish is more with the season and with the readiness of the stomach to accept in part the non-being the most poisonous. In comparison with the fact that the smell and flavor of the flesh of the globe fishes are unattractive,



FIG. 3.—DENDROCENTRUS

there were a little doubt but that they are more from eastern sources. This fish is said to be used for medicinal purposes in Japan, and in Malaya the gill is used as a poison. In Java the fish is prohibited in the public markets. A number of species of this fish, some smooth, some with few spines on the skin, and others with large spines all over them, are found in Johore Strait near the coral bar. They sometimes take a bait, but are more usually caught on lobster pots; they are a nuisance as they eat the bait.

Fig. 4 illustrates *Scomberomorus* sp., a fish of doubtful identity, though it is frequently seen for sale in the markets and is very good eating. It is a small fish about as common as the very flattened *Scomberomorus* and heavily marked with round black spots. It belongs to the genus *Scomberomorus*, these fishes all have the characteristic shape depicted, some are even bigger than the fish shown here, but they are less common in the fish market. They are usually caught on lobster pots; they are a nuisance as they eat the bait. The color sometimes seen of the most beautiful and brilliantly colored fishes, also the famous "blue" fishes, which being down

Fig. 15. *Chaptalia*—It has water through the compressed mouth. This we had no personal opportunity to see. I suppose, however, it is regarded with suspicion by the Malays, even if there is much resemblance to the fins of the ventral fin, at least in its structure. They also mention it is a fish which has its poisonous world (supposed) but that, when freshly caught it is of excellent flavor, but not equally the opposite. Therefore, the best method is to eat it fresh.

In connection with this, and many others—it should be remarked that especially bright-colored fishes are no more likely to be poisonous than any others. In these waters, at any rate, this popular belief amongst natives is without foundation.

GROUP 3. *Poisonous Fishes*.—There are much more numerous than the poisonous birds. Some of them are wholesome to food (e.g., the various Catfishes) but most of them are of such repulsive appearance that no one



FIG. 16.—*Plotosus lineatus*.

would be likely to wish to eat them. One, most widely known to the Malays is *Plotosus lineatus* (Fig. 16) of the family, *Tetraodon* or Catfishes. This is a very numerous family, comprising fish of all sizes up to three feet and four feet in length, though most of them are small. They are found in fresh water, brackish, or salt, and may be met with anywhere in shallow water. They are capable of surviving a long time out of water, and, like eels, frequently make journeys inland from one pool or stream to another (Fig. 17). They are generally characterized by a very large, flat head furnished with a varying number of long filaments or barbs springing from both upper and lower lips. They are devoid of scales but have smooth skin like that of an eel. The gill-slits are large and open in an oblique shape, and with a well-developed operculum. They all possess very strong upward-bumping organs (pneumonia) near the anterior margin of the dorsal fin, and one at the anterior margin of each pectoral fin. The colour is usually black, or brown, without markings.

They are good food fishes and extremely valued by the natives. There

on procuring a remedy for eating them. The Wiley fishermen, however, are not so afraid of their poisonous spines. The fish often in this greatly enlarged state, sleeping, goes with about 16 heads off the spine on the upper jaw, and is fed with anything, ready or soon as they fish are made, that comes to hand. The cavities resulting from these stings are usually found in cotton, water, or have lost so the fish, usually water over them, the digested with hands, from which caught. They are caught by means of traps.

To cure the patient of the water the patient was taken to a short half an hour, swelling (as tent 1st and great pain. The dorsal glands began swelling the joints, the head, and there was a swelling of joints, the head. The patient, red by symptoms of collapse with little pale cold sweat, body, the patient. The treatment is to block off the painful stomach and to block off the digestion of stomach and absorption



Fig. 1. *Amu*

to be used above the patient, and then to apply hot bottles and warm packs to overcome the collapse. The pain will probably return in a couple of hours, as the effect of the injection wears off but as the treatment the system is overcoming the toxins and it will be less severe. One case there are a small dose of morphine and be assured that all will be well in about twenty hours. The Malays say that the weakness of the camp will remain and is curable. *Experiments.*

Using the two examples *Pleurogrammus* (fig. 1) and *Amu* (fig. 2) it will be seen that the term *line scutellus* is applied to a number of species varying both in appearance as regards the line and the number and character of scutellus. For example, *P. amu* has barbs about six seventh of the length of its body and arranged as follows: a pair of long superior anal fins, anal fins, short inferior anal fins, a long upper lateral fin and long lower lateral fin on each side. The second dorsal fin above and the anal fin below are continuous with the caudal fin as shown in fig. 1. It is of a short slender shape though younger specimens may be more of a deep pink. *P. amu* is the line scutellus *par. caudatus*.

Scorpa (fig. 14) has a quite different arrangement of fins and bachel, having only the long upper lateral and a pair of short ventral on each side. The position of the poisonous bachel on the dorsal and pectoral fins in the same as before; an enlarged view of the dorsal bachel is shown in fig. 8. Now even the lateral of this family differ in detail, they all have the following characters: head large and beakoned and furnished with bachel body broad and flattened dorsocentrally.

For more variants see the fish of the order Scorpaenidae, of which a good example is *Pterodactyloides* (fig. 15). Some of these are found at least in the Philippines, according to W. Hanna, of the Bureau of Fisheries at Manila. All these fish are of most repulsive appearance, having large mushroom heads covered with wartlike excrescences, the eyes usually protruding from the top of the head, a row of paired spines down the back (each of which contains a poison gland at the base), and large wing like pectoral fins.



FIG. 14—Scorpa

These are usually to be found about rocks and reefs and harbours particularly with their surroundings. They may be of usual colours such as *Pterodactyloides*, or of dull colour resembling a wood grain rock.

*P. dactyloides* is known in the Malaga as 'Layon'. This name is used for several allied species. It is a small fish about an inch or two long, and of spiny and tail-like appearance. Colours light brown with darker markings and indistinct stripes, dirty white on the under side rough as scales, a fringe of filaments from laterally. Head large and irregularly shaped covered with excrescences and with a number of papillaceous growths springing from it, which give it the appearance of being covered with warts. Gill skin large and spreading prominent and thin-skinned. Dorsal fin continuous from caudal to rest of body and provided with a large number of spines, themselves armed with smaller spines and lines, except at their bases, where they are ended by a rugged membrane. Pectoral fins large and wing-like like two lowest rays free. They are very common in Japan Strait.

*Siganus* (fig. 8) is of the same family and very much the same colouring, but has scales. It is also of thick squat build and is certainly much uglier than represented on the figure. In this species and others of the order (most the specimens in cages) with formidable spines.

*Sparisoma lalandi* of which I have several specimens caught on the coast of Japan, belongs to this group, and is perhaps the most hideous fish in existence. It resembles *P. defasciatus* but the head is coarsely enlarged and, if possible, more repulsive. None of the more glibly featured are exaggerated. It is of a reddish colour, with bright red warts-like spots all over, and generally about one inch in length. Though the flesh of all these fish is said to be not unpalatable, they are greatly dreaded by the Malays on account of their venemous stings. In the easy New Zealand, the name "Lapou" still covers up legendary lore as "Apou," meaning an enormous and terrifying monster of the deep.



FIG. 8.—*Siganus*.

The Sting Rays (Dipnoi).—These fishes have the general appearance of sharks, but they are furnished with a long, thin, whip-like tail. At the free end of this organ there is a stinging apparatus in the form of a barbed spine which may be up to four inches in length according to the size of the fish. This spine has a duct on its under side communicating with a poison gland at the base. Its general arrangement reminds one strongly of the structure of a lancetous pest. Perhaps some important persons first got the idea of the tortoise pen from observation of this organ. One may guess the tempting appearance, as to which of the two contrivances has done the most damage in the world!

These long rays may be of any size up to six feet across the "wings," or even larger. They usually lie on the bottom in muddy or sandy places and are quite peaceable except when attacked or trampled upon. In such cases the creature's mode of attack is to raise the leg or arm with its whip-like tail and then, by writhing its body to draw its spine into the flesh. By this means it produces a lacerated wound which is bound to be kept on account of the skin and there is addition to the

from hatched by the queen. The male, I had thought, hatched first, but was then followed by rapid swelling, with the appearance of a large, round, white, gelatinous mass (the head of violent inflammation and perhaps gangrene from it). There is probably no immediate danger to life from the sting of a *tygon*, as the poison appears to be principally local. Therefore a treatment should be directed towards the elimination of the local infection.

The fish is sometimes used by Malays for the purpose of inflicting external wounds and when dried and ground up it is used as a powerful small application of this fish are often caught by amateur anglers in the water about Singapore, and should be handled with great caution. It is quite worthless as food.

There is some interesting legendary lore concerning this fish. In Malay names in *Manus* part. It is found in the south of New Zealand where it sometimes grows to enormous size. In that country the Malay word 'Man' (fish) is *Man*, while the word 'Paku' means 'Wing'. This fish could hardly be described better than as 'Wing-fish'. According to an ancient legend, the North Island of New Zealand was a great fish which was looked by a god called *Manu*, who, sitting upon a reed, pulled up this fish out of the Pacific Ocean and it became dry land. It was then called 'Te Ika a Manu' — 'the Fish of Manu' — a name used by the natives and quite recently. The Maori named Port Nicholson (Wellington) 'Te Ika a Te Ika' (the eye of the Fish) the long northern peninsula 'Te Ika a Te Ika' (the tail of the Fish), the West Cape of the South and the East Cape were called 'Te Ika a Te Ika' (the eye of the Fish), while Auckland situated at the base of the Northern Peninsula (as it was called) 'Te Ika a Te Ika' (the eye of the Fish) and Te Ika a Te Ika (the eye of the Fish) was called 'Te Ika a Te Ika'.

A glance at the map of the North Island will show the resemblance of its shape to that of a gigantic ray, and the accuracy of the ancient Maori geographers in placing their points as they did.

#### REFERENCES

- Barrow, J. *Journal of the Voyage of the Ship "Plover" to the North Pole, 1818-19*.  
 Barrow, J. *Journal of the Voyage of the Ship "Plover" to the North Pole, 1818-19*.  
 Barrow, J. *Journal of the Voyage of the Ship "Plover" to the North Pole, 1818-19*.  
 Barrow, J. *Journal of the Voyage of the Ship "Plover" to the North Pole, 1818-19*.  
 Barrow, J. *Journal of the Voyage of the Ship "Plover" to the North Pole, 1818-19*.

# THE REDUCTION TO THE MINIMUM OF THE RISK OF VIBRATION OF THE AIR IN AN UNVENTILATED INHABITED SPACE

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THE author has recently said at some length, elsewhere, the various factors to be considered on regard to the volume of air which, in actual circumstances, it is necessary to supply to an inhabited space, and the maintenance of a hygienic condition of the air in the space.

In an addendum to that publication (1), it may be useful to give some information regarding the steps which may be taken to reduce the risk of vibration of the air in an inhabited space in the abnormal circumstances when it is impossible to make any addition to the existing volume. In such cases the maintenance of the air in a hygienic condition is out of the question (unless special machinery has been fitted for the purpose), and a subject of little account compared with the more important ones of securing the air supply and perhaps saving human life.

The principles involved have an application not only to the virtual circumstances of men suffering mechanical confinement when the primary reason is to keep the air in a respirable condition until rescue can be effected but also, less rigidly observed, in the case of conventional circumstances in which men are on duty, and who may thereby be saved from considerable discomfort and distress.

The action to be taken to conserve the available air is summarized below:—rescue is neither one, of course, excluded. The recommendations which can be made are neither numerous nor extensive, but if carried out in detail in an unventilated space will enable him to be resuscitated for a period up to eight hours or long as if they were actively ignored.

(1) All personnel not required for duty to be down and motionless as soon as possible absolutely motionless. Those men performing duties to do so with only one man to be used all necessary effort.

The oxygen intake and carbon dioxide discharge of a man is enormously increased by exertion, even without walking about, and conserve the air held as quickly again as if a man were lying quite still.

(2) All garbings to be covered up out of contact with air.

Quilts, particularly vegetable, skins, furs and green oil carbon dioxide.

(3) All air to be wiped up, and steps employed for this purpose to be put down and at constant work air. Oil absorbs oxygen.

(4) Only the minimum of food is to be consumed.

To avoid as far as possible, eating metabolism above the head rate.

(5) No motion not to be struck to "land" the air.



In a relatively short time (in 1 hour) the animals given intravenous sodium desferrioxalate, a small self-cleaning dose, show a marked improvement in the rate of recovery and it is reasonable to believe that if a suitable type of vaccine could be made it is reasonable to expect that it is possible for the use to control the disease. The prophylactic effect of making such a self-cleaning dose, would be profound.

(4) All water to be used up, and any employed for the purpose to be put away out of contact with air.

To prevent evaporation of the water causing the relative humidity to reach a high level (which does) would be the case if the source of water supply was removed.

- (5) Humidity to be prohibited.
- (6) Cooking to be prohibited.
- (7) All sources of animal food to be shut off.

The reasons for Nos. 7, 8 and 9 are obvious.

#### REFERENCE

- (1) PETERSON, RICHARD C. "Viral and Chemical Control and Altered and the Investigation of the Disease." 1958.

#### TROPICAL FEVER OF SUMMIT BURIALIA

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The disease, which is a form of the tropical fever, is a new group —

- (1) Acquired or elective attacks of known disease.

- (2) Fever which have still to be described.

The disease is a co-operation between the disease and the pathogen, and the disease involving these interactions, the disease will be the propagation of cases finally related to the disease group.

With and without others, and paratyphoid fever, particularly when modified by long-term incubation, has been found corresponding under a variety of local names, as one disease a short fever known as "dysentery", and usually associated a distinct entity, was shown by one of us to be a disease with enteric and paratyphoid fever. This applies also to the disease.

<sup>1</sup> Read at the Fifth International Congress of Military Medicine and Pharmacy, London, 1958.

most, and confined to any fibrin, disease where infection is confined to the lowest degree of resistance and the patient in a state just short of complete resistance.

The initial attack of any febrile disease may be characterized by a short continued fever without the classical paroxysms of the disease and as the stage paroxysms may be spent in the peripheral blood and constantly difficult to detect, this type of fever caused considerable diagnostic difficulty in the Shanghai Epidemic. It was especially in the locality was stated to be endemic here, and such cases were regarded as possible examples of a condition known there as "Shanghai fever" and these true cases was determined.

Yet another variety of short fever common in the tropics appears to be due to a disturbance of body metabolism by heat, and evidenced by a florid reaction short of heat stroke. Crises of such short fevers may be encountered particularly after children's parties where violent games have been played under a hot sun, an experience which recalls the epidemic held by some tropical practitioners of the old school that in many cases of intense fever the disease can be cut short at the beginning by a sharp purge.

Dysentery and phlebotomus fever are recognized by most authorities as definite short fevers although, when analyzed, they are so far from being definite that attempts to attribute the uncertainty in several attacks are unsatisfactory owing to confusion with classically similar types of fever. In Malta, where there is very little indigenous malaria, only about 10 per cent. of cases in the island suffer from several attacks of phlebotomus fever, so that supposed recurring attacks of phlebotomus fever elsewhere probably indicate malarial dysentery. On the other hand being malarial dysentery fever, enteric or malarial fever, occasionally hepatic malarial. In the connection it may be stated that frequently these persons showing considerable febrile reaction at the time of phlebotomus bites do not contract the fever, that fact suggests an immunity akin to Eastern fever.

Influenza, even in the tropics, is a source of diagnostic confusion for the virus may not be a deciding factor and though the milder lymphatic forms of influenza chiefly concerns the small variety, while that of phlebotomus fever and dysentery of the larger type, the reported working error in the diagnosis of blood counts is reflected usually in difficulty in the diagnosis. At times outbreaks of phlebotomus fever show an early symptomatic colic, diarrhoea, pharyngitis or tonsillitis and are apt to be mistaken for cases of dysentery or influenza. Influenza also certain of these outbreaks have revealed the fact that patients who presented these breaking symptoms had suffered at some little time previously, from either dysentery or malarial pharyngeal catarrh. The suggestion of these symptoms may be explained as arising from a general congestion of the body which puts on the weakened parts, the congestion being produced partly by the vasodilation which accompanies phlebotomus and other fevers, and partly

by the hot blood temperature, which rises rapidly during the phlebotomic attack.

Recent investigations have shown the importance of sporulation as a cause of death even in warm tropical countries. A series of leishmaniasis, whether distinct species or only variants of the same, has been said to form of a variety of types: the first may be malignant and cause death 10-20° F. or may be more mild, lasting three days or longer, and can be considered intermediate or middle backed, severe with or without relapses. The more severe infections show remissions, sometimes of a toxic haemorrhagic type, liquefaction of the viscera, and a trace of albumin in the urine even to be constant signs even in the milder cases. In some of the Malaya series the symptoms were so like dengue that Fletcher considers that some part of the dengue recorded there is really sporulation. Leishmaniasis could hardly be isolated from the blood during the first seven days of the disease and from the urine from about the fifteenth day to the twenty fifth. The relationship of the various leishmaniasis isolated in such collections to the subject of sporulation, some workers consider that they all represent one species of free-living sporozoite acquired in the first place probably from contaminated water: the variations in virulence and in reaction to pathological tests being produced by differences in passage soil, temperature and humidity. Others hold that a series of different species of leishmaniasis is involved, and in these supposed species distinctive names have been given. It is true perhaps at the present stage of knowledge to be unspecific and list, upon all leishmanial infections as probably representing variations of *Wolfe's disease*.

The question arises: Is there any simple practical method by which the average worker can distinguish the more severe forms of phlebotomus fever and dengue from the milder cases of *Wolfe's disease*, other than by cultural tests and animal inoculation? Fortunately there is. One of us carried out lengthy investigations into the blood picture of the pyrexia commonly met with in the tropics. The results obtained in many cases simply confirmed the findings of other investigators. Briefly, if the fever is of acute onset, and provided the examination of blood films has excluded the presence of the malarial parasite, or the sporulation of relapsing fever, then a leishmaniasis with a relative increase of large lymphocyte counts in phlebotomic fever or dengue, whereas a leishmaniasis accompanied by an absolute and relative increase of the polymorphonuclears suggests that the pyrexia belongs to the *Wolfe's disease* group.

The leishmaniasis (4,000 per a mm.) lasts for the first three to five days of disease, followed by a leucopenia dropping up to 50,000 to 30,000 per a mm., as or about the tenth day of disease. The leucopenia is transient and disappears in the course of two or three days. The lowest point in the leucopenia occurs on to nine hours after the onset of the pyrexia and is a useful aid to early diagnosis. The differential leucocyte count shows a decrease in the number of polymorphonuclear leucocytes, and an increase of

its symptoms, especially of the large variety. The monophlebotomy during the fever and return with debility etc. A late monophlebotomy decision has been decided. It is more commonly seen in Egypt and the Nile than in the Mediterranean islands on other words, the post-acute, a monophlebotomy is found to more known to be heavily infected with infectious disease, and may merely indicate a return of the blood picture to its pre-febrile condition.

Furthermore, as Young in West Africa showed, Widal disease may be distinguished from yellow fever by estimating the amount of albumin in the urine during the last forty-eight hours of illness—a large content of albumin indicates yellow fever. Thus a case of suspected Widal disease showing a solid clot of albumin when subjected to the boiling test is in reality one of yellow fever and conversely a supposed yellow fever patient with little or no albumin is probably suffering from Widal disease.

The difficulty in sorting out the true undifferentiated shock fever is intensified by an unwillingness to acknowledge failure: this is particularly so evident in Government service where those responsible for hospital records sometimes prefer doubtful or even no diagnosis, diagnosis to none at all. But when every known and available diagnostic test has been used thoroughly without result, the physician is really one of "unknown origin," and the label should be applied, instead of knowingly or not carelessly elevating to named rank some case that is only a result of the unknown infection he at present the "borderline" of one illness may be dependent on the "syndrome" of another and to the "mildly fever" of a third, all really representing the same undifferentiated disease.

#### CONCLUSIONS

Diseases may be infinite, because they are typical examples of well-known infections, or because they are separate clinical entities that will resist full description. The first class include mild or otherwise named such conditions as typhoid, paratyphoid and undulant fever. Malaria frequently shows a low undulant fever, the paratyphoid being absent and the parasites so scanty in the blood as to be easily overlooked. Absence of blood counts may also account for unusual delayed febrile attacks, in children, and after heavy exertion, in hot climates. Dengue and psittacosis have also been recognized as definite clinical entities, but owing to their lack of definite symptoms are frequently confused with malarial syndromes. Especially is this the case with influenza, which is very common in the tropics, but rarely accompanied by malarial attacks. The blood picture of dengue and malarial fever are often not sufficiently different from that of influenza to separate, with any certainty, these diseases. Recently psittacosis as a cause of shock fever has attracted attention. The leptospira is a group of many variants, which although indistinguishable morphologically, yet seem able to cause clinical syndromes which vary

from a day or two of pyrexia accompanied by agitated delirium, and a trace of albumin in the urine, up to a severe *typhus* *typhus*. Weil's disease has probably at times been recorded as dengue. The more acute forms of dengue and usually fever itself, however, is distinguished from typhus by their respective blood-pictures. Weil's disease in its late, one generally is distinguished from yellow fever by the relative quantities of albumin in the urine. If a case both met the diagnosis in yellow fever, if there were a trace of albumin, Weil's disease. The attempts which are being made to distinguish and describe *typhus* *typhus* *typhus* are handicapped, and the confusion increased, by the habit which exists in some quarters of labelling cases, in which the diagnosis is really unknown, with a definite name for the sake of hospital records. It is an aspect of all possible investigations remains a 'pyrexia of unknown origin' it must be honestly left as such in all such returns.

#### TYPICAL FORMS OF SHORT DURATION—CONCLUSIONS

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The febrile diseases of the tropics, formerly differentiated by clinical considerations alone, can now be grouped in a scientific manner, thanks to the improved methods of investigation in progress. Bacteriology and geographical distribution as a means of identification, have given place to detection of the causative organism. A rational system of classification and a better nomenclature is now possible. During the last few years it has been shown that several *typhus* *typhus* *typhus* are due to organisms closely inter-related, all members of the *typhus* *typhus* *typhus* family.

The following are points of the more important diseases of this group:—

**Yellow Fever**.—Once confined to the Antilles, the Atlantic coast of Mexico and America, penetrating into the interior along the rivers, and on the West coast of Africa, it was also found in European ports. Thanks to the discovery of the role of *Aedes aegypti* as vector, and to anti-malarial and quarantine measures, and the "Rockefeller Foundation" this disease is now under control in America. But it remains endemic in Africa, owing to bad hygiene conditions.

Great progress was made by the work of Reed, Carroll, Agramonte and Lazear with regard to the transmission of the disease by the mosquito *Culiseta* *typhus* *typhus* *typhus*. It has been, correctly, that the causative organism is the *typhus* *typhus* *typhus*. Several investigations held that *A. aegypti* and *A. tritaeniorhynchus* of Weil's disease are identical. Many observers, however, consider that *Aedes aegypti* cannot transmit both *typhus* *typhus* *typhus* and believe that yellow fever, shows beyond doubt to be spread by the mosquito, cannot be caused by *A. tritaeniorhynchus*. In 1907 Walter Hume and Richard Wilson, working with yellow fever, and proved that the disease

Adults capable of transmitting this venereal to venereal by injections of blood only the late 1st instar. The sexual organs were identical with the larva in size. Blood-cultures were negative, and leptoanemias could not be found in the venae.

Yellow fever is found exclusively in tropical and subtropical zones. There is no true immunity, as once supposed. The female *Aedes* bite early at night, but the young females before hibernation only late in day. The virus which takes about twenty days to develop, is present and capable of attack during the whole life of the insect. The incubation period of the disease is three to six days. Diagnosis has to be differentiated between malaria, Weil's disease and dengue.

Weil's Disease and other *Synanthropus*.—Discovered on the occasion of these diseases data from the last fifteen years. India, by and others recognized *E. intercalummaris* as the causative agent in 1905. General investigations confirmed that. The combined results of many observers demonstrated that *E. intercalummaris* and *E. intercalummaris* are identical and that the *E. intercalummaris* of Weil's disease is none in the same as this organism in role.

Urbanich and Grossmann supposed that the leptoanemias lived in dirty water. Baumann and another consider that the leptoanemias of man, of the cat, and that found in water were all of the same species to which they gave the name *E. intercalummaris*.

One presumes, therefore, that the diseases are not due to different species. Variations of clinical symptoms are explained by different degrees of virulence, dose of toxin, and the individual's resisting power.

The following are some of the group of diseases:—

Weil's Disease.—Described by Weil in 1905 it is found in Japan and many parts of Europe. The *E. intercalummaris* probably penetrates the skin through abrasions, or enters by the digestive tract. The incubation period is five to six days. Diagnosis is confirmed by the presence of the organism in the blood, in the early stages, and in the urine later.

Prophylaxis includes sterilization of sewage, destruction of rats and prevention of bathing.

Fever holothymus.—This is found in Japan, particularly in a very common. It is caused by *E. holothymus*, which resembles *E. intercalummaris*, but distinguishable by ecological facts. The *Redi* rat (*Rattus norvegicus*) carries the virus which is probably transmitted by insect bites. The leptoanemias is found in the blood during the first few days and in the urine after the eighth day. Symptoms resemble Weil's disease. The mortality is nil.

Yellow *Synanthropus* leptoanemias *Synanthropus*.—Described by Baumann, Lehn and Langer. It resembles yellow fever and Weil's disease, with two types—one like yellow fever, the other a paratyphoid with jaundice. *Synanthropus* are found in the blood, urine and sputum. It is incapable of transmission by *Aedes* mosquitoes, and is spread by flies.



# THE EVALUATION OF SOME ASPECTS OF AIRBORNE RESCUE<sup>1</sup> BY COLONEL HENRY T. WELLS, *RAF, RETIRED*

## (1) HISTORY

Air ambulance service has been used with success by various countries, nations, peace and war.

In England, since the War, it has not yet been used on a large scale basis, its hospitals being somewhat easily accessible but when conditions are suitable in outlying districts this method will obviously come more into use. In our Air Force we use a where flying stations are situated at long distances from our hospitals, or where we consider an overage is preferable to other means.

In the East we use it as the means of evacuation. In Iraq since 1933 it has been the regular method and it is the only means of rapid transfer in that type of country. It has proved extremely valuable in war operations both on the desert and in the hills.

In England it was not until the year 1939 that we turned our attention over only to this type of transport for casualties.

I can find no history of the regular employment of air ambulances by Great Britain in the Great War.

## (2) TYPES OF AIRCRAFT SUITABLE FOR AIRBORNE CASUALTY

Before we consider the carriage of casualties by air we must know our requirements and what type of aircraft is suitable, or, owing to design of aircraft differing some types are not suitable.

Requirements—We must definitely say all aircraft for such transport must be capable of taking a man lying down, and that it is inadvisable a stretcher and fittings for securing the stretcher. It must also have an opening so that a patient can be placed within reach in the lying position.

## TYPES OF AIRCRAFT SUITABLE FOR CASUALTY OR EVACUATION

These are—

(1) Aeroplanes of the various types, including Gliders and Flying Boats.

(2) Airships.

In this paper it is only proposed to deal with the former—these are divided into the larger and smaller types.

Larger Types—These with a large and roomy fuselage, or a large heated flying boat. They must have an opening whereby lying men can be placed inside, this opening can be by a side door or an opening in the nose.

<sup>1</sup> Read at the 15th International Congress of Military Medicine and Pharmacy, London 1938.



of the aircraft. It is better to have a rule operating as handling is easier, but when it is undesirable in certain types, such as flying boats, to interfere with the hull, even one easily be lifted over the side.

**Staircase Type**—There is the two section type, and which are capable of being landing grounds which are unsuitable for the larger aircraft. These usually are unsuitable of accommodating a flying area owing to the cross bearing wires of the fuselage, and it is not possible to clear them, as the bearing wires are an important part of their design. Aircraft of this type capable of taking a staircase can be so designed that there are no cross bearing wires. This is brought about by using the system of booms. Both types of aircraft, built by a British firm to accommodate a staircase, are already in use, the means of entry is by removal of the covering on the upper surface of the fuselage. A staircase is then easily lowered on, and the covering replaced. We have such a machine in the *Mersey III, F*.

**Carriage Outside the Fuselage**—You can, by means of a special stretcher of the Red Robertson type, sling a patient in the upper surface of the fuselage. This method can only be used in emergencies and when other means are not available.

#### (d) USE AND LIMITATIONS OF AIRMAIL

The transfer of patients by air is the quickest and most comfortable method. It is particularly valuable where ordinary operations are at a distance from the base, and in countries where transport by such means as road, rail or water are difficult, or almost impossible, without a great deal of expenditure on the route.

The Great War has shown us the importance of early surgical treatment of those grave wounds of the abdomen, head and chest, and we know that on few such treatment can be given within six to eight hours the chances of saving life are proportionately decreased. Local transport is often slow and cannot be depended upon, therefore, it is in the interest of life that we should use the air. Experience has shown us that all types of cases can be taken by air, and others brought by the fastest transport they can receive to a well equipped hospital. By use of the air coastal hospitals will in the future be able to deal with patients from wide areas, and thus will be a distinct saving on hospitals and staff.

**Considerations**—There, in regard to removal of casualties, we have and can be put down as: (1) Weather conditions. (2) Landing grounds.

(1) **Weather Conditions**—Gales of wind which might cause the patient too much discomfort, and fog or bad storms, the latter also doing good transport. You can afford to wait when using the air, as your means are quick, and weather reports will help you.

(2) **Landing Grounds**—It is essential there should be landing grounds near to your hospital, and it must be known for what type of aircraft your needs are a variable. The larger machines require a longer

ambulance and therefore our usual subject there is an artificial one, ventilation in winter only.

The most desirable and most hospitable reasonably accessible to a landing ground or peninsula, is an established aerodrome. Landing grounds may be temporarily used for one owing to heavy rains, but usually not for long, at any rate for the smaller type of aeroplane.

#### (8) THE FLIGHT AMBULANCE

Under this heading we must include all aeroplanes that are capable of accommodating a flying crew, and we should call them "Ambulance Carriers."

The most convenient type of an ambulance should be capable of carrying two or four flying crew and one hospital attendant. We do not wish to carry a medical officer, he can do no more in the air than a well-trained medical orderly. The orderly should have one of the crew and be responsible for the necessary medical equipment.

*Settings on the Ambulance Aeroplanes*—Should consist of Stretcher Slings and with means of securing the stretcher. Seats of collapsible type for sitting crew and for attendant. Small water tank.

A small cabinet or box for dressings or first aid equipment. A lantern is not necessary, but a small kerosene jet in the floor is most useful for supplying electricity.

#### (9) EQUIPMENT, GENERAL

*Stretchers*—The choice of stretchers is at present limited by the agreement between the Navy, Army, and Air Force to employ only a common standard type of stretcher. This has many advantages, but I believe, however, that the stretcher of the future for air work will be a light metal stretcher which will be adjustable to fit all forms of ambulances transport.

*Slings for securing the patient*—will be fixed to the stretchers.

*Blankets*—2 m. for each stretcher.

*Pillows*—One for each stretcher.

*Hot-Water Bottle, Dental Set, Fan and Packing Cases of First Aid*—All these articles should be of a light weight.

*Supporting Bars for Staph Splints*—In Iraq we found that the suspension bar for Thomas Splint was too high, and therefore a smaller type was brought into use.

#### (10) ANESTHETIZING, CHAIRS, AND BENCHES

An arrangement of anesthesia in wartime can only be satisfactorily provided outside aircraft and definitely available for this work, and under the direction of those responsible for the removal of casualties. Aircraft designed and fitted for one purpose, even though convertible for use as ambulance carriers and used as such in peace time, are not specially suitable for this purpose in war and, moreover are unlikely to be available for ambulance work on the outbreak of war.

The transportation of men (troops) etc. should certainly have to be considered in relation to machines and (and this may, could not I would have to rely on capacity) means of supply, such as trucks, planes and heavy transport material when not supplied by the organization.

#### (7) PLACES FOR PLANTS

There must be supplies from somewhere. We could run only an army between points, but with the great numbers in need there, there should be ample supply of these plants for their purposes and these plants who require most from the stress of our warfare could be employed on this work.

#### (8) HOSPITALS

This depends on the type of the war, and we must therefore divide our cases into: (1) Great War, (2) Small War, (3) Tropical War.

(1) Great War.—When large armies are in contact the work adjacent to the front line will be continuously under shell fire, and therefore ample, most of aircraft or ambulance work on this work will be impossible. The nearest position for such work will be somewhere out of the line, and that brings us to the necessity of the advanced mobile hospitals.

Your landing ground should be reasonably adjacent to these mobile hospitals. A connecting light railway would be of much assistance. You could not expect to clear large numbers by air, but you could send down to your stationary or base hospitals those serious cases which arrived up your clearing hospitals, and these would include wounds of abdomen, chest and head which were recovered early enough to pass on for operation. Shattered thighs, other temporary wounds could be easily got along.

During quiet periods you could clear by air post-operative cases by the quick and simple means.

The base or stationary hospitals also should have an ambulance reasonably adjacent and should be connected up by a light railway.

(2) Small War.—For this purpose we must assume a large operating base established here with sufficient covering up. It is therefore necessary to transfer operations from the field to stationary base stationary or base hospital by the quickest method. Such a base would have several mobile units, and these would establish advanced work areas or advanced landing grounds. These would be without the ambulance airplanes. If the distance from the base to where the very great it would be necessary to establish an advanced hospital, as a journey over two hours by air would be undesirable without some attention to the patients. If a railway, or mobile airplanes or flying boats could be used and form a connecting link with land plants. The main object of an advance in such a type of warfare would be to avoid establishing advanced hospitals by moving your cases direct to your base hospitals.

This we must find is also extremely valuable where the intervening country is hostile and further, if a base is changed, you could remove the serious

usually are provided the hospital force could defend a suitable landing ground.

Under the heading of Small War we must consider the situation where unorganized forces may be operating at long distances from any base or main force, and when they carry their means of egress with them, either in a reinforced field ambulance or otherwise, the only means of transfer to a hospital is by air. Here our ambulance of the smaller type would be invaluable.

(1) *Tropical War*.—The removal of casualties in tropical waters is always one of difficulty, and unless waterways are available it means prying long distances through narrow beach tracks or other ground. This is a long and tedious business and subject to interference by hostile natives and even wild animals. Landing stages have to be established at numerous places. Water or suitable food may be difficult to obtain and fuel, amputations and other needs are a real pain. You may have to take your wounded along with you, a heavy encumbrance to a fighting force.

There is only one way out of this and that is air transport. It is always possible to get a clearing at some suitable place for a landing ground for the smaller type.

#### (2) *Coastwise Operations*

It is important there should be a clear understanding as to the responsibility for the evacuation in confined operations.

This point should be decided before the operations are undertaken but if this is not possible it must be left to the commanders of the service to decide.

#### (3) *Rescue or Wounded to Hospital Base*

It is assumed that the line of demarcation of the Naval and Military responsibilities in the handling of wounded has been defined before landing. The actual distance of the line of demarcation can only be decided on the spot. If resources or points are available it will be the duty of the land as or forces to take their casualties to those or other settled embarkation places.

#### (4) *Island Waterways*

Where operations are in the vicinity of such an entrance and river, and where casualties can be brought down by small river craft or by air craft capable of landing on water the question as to whether these can be used in hospital ships will depend on the local conditions, and on a great extent on the weather-conditions. This point will have to be decided by the naval authority in regard to water craft and probably also in regard to aircraft, but it is probable the latter would land in the water unless it were selected base and transfer their casualties either to land or water craft and elsewhere there would then come under whichever authority was responsible.

In regard to vessels employed on such services, the crews must be left to the Air Force command until they actually hand over their casualties to one or other of the Services.

### 1.1.1. The use of Red Crosses

Although fully employed in continuous work, it has been found the protection of the Red Cross, for a definite work arrangement is in the absence of such marks, both from the sea and the ground.

A large Red Cross on the upper and lower surface of each plane might be used in clear weather, but this would not be very effective, as a visibility was poor.

It seems better to paint the sea in, airplane, a red cross on the top and bottom of each edge.

All night, airplane lights and possibly special identification lights, as used by hospital ships, would afford protection.

It would not be practical to paint each plane with a large painted light or any particular color.

### 1.1.2. The use of Red Crosses

At night—This method has been used on a small scale by the British for several years and is made of it. In Day it is the normal method of navigation, and has proved extremely valuable in war operations (in the desert and hills).

Types of Aircraft—Aeroplane and airship can be used for, with airplanes are considered in this report. These must be capable of a low landing, suitable and have an open wing, for placing the light, and other.

(1) The large type which can carry several cases.

(2) The smaller for carrying single cases, which when landed, grounds are used.

Construction—Aircraft for ambulance service, used in the British, and in most cases in long water, has a construction, where suitable airplanes only are available, suitable to the upper surface of the fuselage in a special structure can be adopted.

Size and Limitations—It is the greatest and most common, and independent of ground transport.

Service cases can be moved early. Hospital can be constructed, the sailing for economy in hospitals and staff.

The limitations are weather and the necessity of having grounds adjacent to hospitals.

Principle and Equipment—Aircraft wings and means of securing them. The equipment consists of suitable pillow, water, drinking vessels, etc.

Medical Attention on board—In the large type a medical officer should be carried.

Advantages—A standard type of aircraft, suitable in all climates, is available for use with a light metal structure has many advantages.

Advantages—Control and Supply—Suitable arrangements be available and under the control of those responsible for removal of casualties.

On the outbreak of war it would be necessary to construct additional appliances.

*Employment in War*—Wars are divided into 'Great War,' Small War, and Tropical War.

*Great War*—Removal of service men from the advanced mobile hospitals to the stationary hospitals.

*Small War*—Removal of casualties direct from field ambulances to stationary hospitals. A useful method of removing casualties from a mechanised force operating at a distance.

*Tropical War*—Removal from the front area to stationary hospitals avoiding the long delays on service areas and all the post-mortemated. Casualties can be removed from a tropical force.

*Unaided Operations*—Importance of a clear understanding as to the responsibility for evacuation of sick and wounded. Should be previously decided.

*Removal to Hospital Ships*—The time of despatch of the Fleet, Military and Air responsibilities in the handling of wounded would be defined. The time can only be determined on the spot.

*Infant Ambulances*—Where casualties are brought down groups by small craft or appliances the question is as to whether they can go direct to hospital ships should be decided by the Navy.

*Boats employed on such service must remain under the control of the Air Force.*

*Patrols under Red Cross*—Boats solely employed on ambulance work should come under the Red Cross protection. The identification from both air and ground is difficult by day but lessened by special lights at night.

Instructions as to lights to make as well possible.

### THE NEW SERVICE AFOAT NEEDS OF MEDICINE, &c.

By FREDERICK E. WATERHOUSE Esq.

*Superintendent Pharmacist*

In the listing of supplies of medical stores to His Majesty's ships it has always been felt that the advanced scale has never met the needs of the service. This is perfectly true, but is mainly understood when we remember how quickly one drug is superseded by another and how long it takes to put an expressed order into operation throughout such an extensive service as that of the Royal Navy.

In the new scale under discussion this evening it will be noted how over that careful thought has been given to the selection of medicines and drugs to replace those which are either obsolete or proved to be of little

1. *Drug*.—Keeping the scale from 1 to 2, the first point that strikes the eye is the removal of waste and the subsequent reduction of cost. This is based on doubt as to the wisdom of keeping the use of anesthetic very largely as compared with the method of twenty years ago when anesthetic chalk powder and anesthetic drags were standard and much used remedies. The equipment of anesthetic drags however has not been discarded of anesthetic, for we find tablets of chalk and lime included with the medical officers' outfit. Previously, these had been supplied only to those ships in which no medical officer was borne.

Sticks of ether has given way to aseptic preparations in tablet form for the preparation of anesthetic vapours. The value of sticks of ether has not been overlooked for a liberal supply is included in the special outfit provided for the general surgery operations. Anesthetic supplied have been increased generally, with the addition of chloroform of lime liquor and opium and for internal administration *drugs* 1. 2. which takes the place of oil.

Various changes have been effected in the hypodermic drug outfit in place of the tablets most of the drugs are in aseptic form, each ampoule being sufficient for one dose. New drugs added to this outfit are adrenalin ampoules in oil, digoxin in oil and pilocarpine. A few of the original tablets have drugs remain namely apomorphine, hyoscyamine and pilocarpine. Fortunately the latter are not much used and so the convenience of preparing a solution under aseptic conditions is maintained.

The use of N.A.B. has led to the introduction of a kit for use in treatment of the possible demands. In the equipment of outfit for 500 men and over 2½ of the drug are included together with 500 capsules for internal use. Methyl salicylate in being a standard remedy in laryngeal practice, is also included in the new outfit.

For many years past it has been customary to provide a large quantity of oil for use in medical observations. In most cases the oil has been returned at the end of a treatment either mixed or fully liquefied. So little was actually expended for the work that the demanding of this item has been left to the discretion of the medical officer of a ship who may also draw a smaller quantity of extract of such with oil for use.

Regarding special use tablets the only noticeable change is the addition of digoxin to the drugs already included. Most medical officers will now with pleasure the passing way of the pills which are connected with the exception of the famous colic and hyoscyamine. Twenty years ago when I entered the service it was the custom to supply to medical officers pill masses in well marked jars. The method of preparing pills suitable for administration was in rough and ready of the

<sup>1</sup> Here, the letters are *drugs* and it has been decided to replace *drugs* with *drugs*. The quantities allowed are 1 oz. 1 lb. and 1 lb. in the No. 1, 2 and 3 kits respectively.

mer, roll the piece up on a tile with the aid of a spatula, so as to form three equal parts into a cylindrical shape and cut as necessary as possible into twelve equal parts. The work covered in 1903 was a step further in substituting powdered pills ready for administration. The pill however, is not used at home for many years as a means of administration, due to the cost of the hard casting and hard some which have been unchanged to the present date. The use of capsules has been replaced by the more reliable and hygienic tablets and in addition the crystalline and hyaline tablets are also included for use in hypodermic or intramuscular injection. I should not lose sight of the fact that the only tablets supplied for many years being resistant for the preparation of the popular and such dissolved soluble powder.

A great change will be found in the supply of medicines. A long list would have been started in the possession of medicine of simple and compound extracts of medicines as ordered in dispensing the basis of compound medicines. The removal of compound medicines of simple will no longer come a shock. In response, however, in another form somewhat dispensed in various portions of medicine. These preparations will certainly be found convenient. The mixture clearly resembles the hospital treatment, but contains extract of hyaline and glycerine as form of syrup. The same means medicine contained in an ingredient will be more active in the water, and in general of equal satisfaction in small quantity. In the work covered about medicine the work is divided by an up stream because of equal. The concentration of the mixture is such that 1 oz. diluted to 5 oz. with water produces an excellent single mixture with a dosage of 1 oz. The full composition is indicated in the book of order. The method of preparation of these for a hospital includes 1 gallon of the concentrated mixture, which when diluted produces 1000 doses.

Although medicine has been supplied since 1902 no real drug for use in conjunction with it has been included in the medicine chest. This has now been remedied by the inclusion of sodium and phosphate. New containers have been introduced in bags and boxes, such as ammonium, and hyaline, ammonium, sodium of yellow oxide of mercury, ammonium acetate, and many more and such chloride the latter may be employed as a substitute for the proprietary article, sodium poly. This is a new feature in the medicine supply of various medicines and anti-infective agents.

Before leaving the medicine section a word must be said about the dangerous drugs. Counts has been removed both in the crystalline form and in hypodermic tablets. In the same sense the drug counts in ophthalmic tablets, but in the ophthalmic preparations only a small quantity of the salt is allowed.

Hypodermic is a convenient means of preparing small quantities of hyaline proteins has been added to the stock. Forty four parts of the compound dissolved in 1 oz. of water produces approximately a 10 volume



contains all *Thiopsis purpurea*. A local supply of *Thiopsis* at East End, I suppose, and I or I believe for shipment are sufficient, but in ships not having a supply of other gelatine bands, sometimes some drug are allowed. There are proposed on charts of twenty four days' trip, but up as required. To be supplied separately in a special charge to the commanding officer. Last but not least, suppose in the form of fig. tablets of some adhesive and has been added additional to and not in place of phosporates.

Now we turn to the dressing, which to find that the sprouts and sterility preparations have been discarded in favour of what cotton bandage and gauze.

Cataplasm has been replaced by a new bandage. This preparation is similar to the well known proprietary articles with phlogeston and thermoplastic. Rubber gloves and finger rings have been added to the suite and the necessary French cloth has not been overlooked. Last improvement with 4 per cent. of grease and latex. The place of grease and drainage and if not so convenient as the proposed dressing, it has only and not so liable to deterioration. A decided advance has been made by the substitution of dispensing scales on a brass pillar, for the small platform to be held in the hand whilst weighing.

Spiracles of stainless steel replace the old gutters and should be retained for use on board ship where ordinary steel is so prone to rusting. A selection of sprouts and sprouting in forms enclosed at on the various other equipment appears in the following:—

Carr's rubber sprout, Stanton's bell iron sprout with dust panes with supports, Froude's attachment and Isomys attachment, and a roll of Gouda's sprouting in addition to the Malins's sprout and better's modification. There are also the Linton's and Newell's sprouts provided with the original attachment chest.

The old fashioned inground sprout has been removed and the Salway and Old adjustable sprout substituted. The range of wire being now maintained up to 44 in. The glass method tubes have been discarded in favour of Anderson's metal variety, and in the system a new feature is the inclusion of some operation glass hitherto supplied only in hospital service.

A welcome change in the new method of dressing the sprout machine chest bottles. The old arbitrary method of designating one bottle as a No. 10 bottle another as a No. 12 disappears, and in its place a system of designation by the actual capacity has been substituted. Unless one had had long acquaintance with the old system it was impossible to remember the use of a bottle or compare its capacity. The number on the bottle bore no reference to the capacity, even by a coincidence. For instance, the No. 12 bottle holds 22 oz. and the No. 10 bottle only 12 oz. This alteration will be repeated only by force of antiquity. In the water, urine and milk test, certain few changes only have been made. Quinine and chloroform sulphate have been added to the water test, but whilst potassium nitrate and starch contained in tablets have given way to separate

value of the professional value" and start. The Dental Association's consideration has been certainly increased.

The bacteriological work has been slightly modified in adding methods with a neutral and strong and covering the same life, growth and and some methylene blue as well as the dead cultures.

Many changes will be noticed in the emergency cases, although the 1 part of splint cases are now provided for cutting out the standard 10 in the preparing splints. Hysteria on stress were supplied considerably dent having apparently been placed in a possibly heavily postulated. Dental powder is now being provided, has been received, and in the place the old fashioned one, and much powder comes into its own again for denting purposes. Plaster and plaster are also supplied and plaster cement takes the place of soft plaster.

A convenient small equipment of stores for the use of medical officers, appointed for strong tools has been established and consists of a complete set of dent of instruments and drawings with a modified instrument sheet. The present small set provided, whilst satisfying requirements for a few days has not been found satisfactory for long periods.

In the original instrument set a few changes have been made but nothing very drastic. For instance a small operation has been included. A pair of holding forceps are added to the ligature set, and Hays are removed. No change has been made in the set one which is no doubt accounted for by the establishment of a set of instruments and standards for ophthalmic operations the set being complete with almost every up-to-date requirement. The dental set has been modified in the extent of reducing the number of instruments, leaving those only which are essential for the requirements of a medical officer.

Referring to surgical instruments it will be noted with pleasure that Jacques's rubber-roller cylinders have been added to the set, and other additions received. Clutton's ligatures ranging in size from 18/14 to 20/11 are added to the main equipment, apart from the cylinders set provided for the private military operations. Hence for sharpening needles and hypodermic needles will be supplied on order and I should imagine will considerably reduce the bill for sharpening and repairing of instruments. A limited stock of forceps formerly provided by the medical officer himself will now be found in the instrument chest as well as almost the complete set. Regarding ligatures and sutures the work of silk and catgut goes up to an almost twenty in three cases of each, knotting being supplied in envelopes each containing twelve threads.

Drawings taking in those were provided in glass tubes takes the place of the boxes in being previously supplied. Schramm's catheter is included taking the place of Oliver's and Thomas's catheters, and from now on I have heard the change will apparently be welcomed.

In small vessels where accommodations for medical stores is limited a modified set of surgical instruments has been devised, consisting of the





**First Examination.**—There was no injury of the nervous system except that of the left leg. The legs from the left are thus:—The lower three entirely paralyzed. The quadriceps femoris of the upper femur.

**On November 17th**—On October 18, 1889, the animal was examined and reported on independently in previous memoirs, adding some very slight modifications to reported findings. There was complete paralysis of the legs and head in the left.

**C. R. S.**—The pupils were large, equal, and reacted freely to light. There was paralysis of the legs on the left. The tongue, on protrusion, deviated to the left. There was a complete, symmetrical hemiplegia of the left side (muscular tension reflexes, tactile sense, and an extensive plantar response) including a left lateral paralysis of the upper arm (type). The abdominal reflexes were absent, also a complete, left-sided flexor-extensor tone present. Though no evidence of the usual fields of extensor flexion was demonstrable. Nothing abnormal could be found in the lower limbs, although on 19th. There was no sign of any change in the body. There was no evidence of any abnormal view in anything which could have caused this to be an accident.

**On November 18th**—The patient has continued to improve but not more markedly. On 18th, 1889, a complete history of a right to left lateral shift in the arm and legs, and plantar response. The left leg was not at all completely on the arm, but that arm was shared as type. There was no more evidence of any of these. It was still in complete flexion, and no other signs, such as, no other.

On October 27, 1889, he was transferred to the St. Joseph's Hospital, New York, where he died on October 22, 1890.

#### Second Examination and Notes on C. R. S. Hemiplegia. Hemiplegia

**On November 18th**—The patient had a complete lateral hemiplegia. The lower extremities were nearly completely paralyzed. The patient was not at all completely paralyzed. The left leg was not at all completely paralyzed. The patient was not at all completely paralyzed.

**Examination.**—Examination and notes on C. R. S. Hemiplegia. Hemiplegia. The patient was not at all completely paralyzed. The patient was not at all completely paralyzed. The patient was not at all completely paralyzed.

Paralysis was essentially bilateral. weakness of left side of the face more so the lower than in the upper half. pupils were slightly and symmetrically, slight voluntary movement in the left hand. the patient in the left leg was markedly paralyzed. no extensive plantar response or a plantar response was normal in the left leg but present in the left arm. the patient was not at all completely paralyzed.

**Comments.**—The history of falling out of the hammock seems to be more the result than the cause of his condition. The direct evidence to show an extensive hemiplegia can be found in the arm and leg, and the patient was not at all completely paralyzed. The patient was not at all completely paralyzed. The patient was not at all completely paralyzed.

**Notes on History.**—Regarding the nature of the external injuries it will be remembered that the patient when he was seen and leg carrying the answer two kinds of the patient's head. the third he is a large and round one at the time and then he is a large and round one. The patient was not at all completely paralyzed. The patient was not at all completely paralyzed. The patient was not at all completely paralyzed.









[illegible][illegible]

It was only when the plaintiff was standing, and the female witness with a plastered forehead, smiling and waving her hand, that she heard, and is doing, the plaintiff address her. This was the first time the plaintiff looked at the witness before she stepped out of the witness box. The witness looked at the plaintiff, then at the plaintiff's feet, and then at the plaintiff's feet.

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This view of agency, conceptual development, as an interesting and important, if not an essential, aspect of health care.

H. T. is aged 35, has 11 years' teaching experience, is a male, single, white, free school-leaver, working. The group, no longer, of government officials.

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The adolescents on August 31, 1981. On present, was observed, very ill. The last cold, started 1 week ago, developed into a fever but no breathing again. The adolescents was opened. There, a third of the upper part of the pyramus, was broken. It is described, deep pain is moved, and having many small purple patches on the











conced what he was doing." "In the middle of a meal he would push away his head and think about something in connection with his work. When the war with England broke out he worked continuously under Lord Dufferin, for three days and three nights with four consecutive, and then spent six hours in his bath during the afternoon. He would conclude a letter before a meal whenever it was most convenient, and his pen luxury was a last task in which he constantly indulged. In the years advanced he took these habits more frequently to relieve his constant sorrow and painful past.

The writer, quite first, however, pronounced about 1881 when he was 33. We are told that near signs of deterioration in his army benefited him, some times in leisure days when his condition was vigorous. The "writing" in his stomach—long which he had suffered before—became more frequent and his own opinion in connection. "I have with me the germ of an early death, and shall die of the same trouble as my father." In passing it may be noted that Napoleon's grandfather, before, wrote brother Louis and sister Caroline, all died of cancer. In February 1807 he was located in a room with the soldiers and the weather they could check up his hair. Napoleon in the time more almost was constant, that and excellent food during the Russian campaign of 1812 greatly aggravated his dyspepsia. The stomach food and unwholesome food led to a movement of his stomach of greater space he was up longer, and some great illnesses as food. On the eve of December the last sign appears of his tendency to cancer. The gastric brought him to notice the advance but he would not give the word. He sat motionless upon his knees forward, pushing his hands together, and his legs were twisted. Later, during the Russian march, his stomach his condition improved and he was a typical healthy for the health of Paris which was worried and concerned. The dyspepsia has been here in better health.

In August, 1813, at Dresden, when he might have followed up the Alps and captured them, he was seized by a violent attack of "gastric space." The surgeon he believed that he was possessed, his will was paralyzed by a failure of memory. An army corps was lost and the disaster of Leipzig followed. This particular attack of pain lasted, we are told, six days. On the morning of Waterloo he failed to finish properly, he turned to the ground to burden him, but the Prussians did not wait, and were able to move on him to save the situation for the British. His horses, says Goring, could be taken any day and know that he was dying and peacefully all.

Consequently his long and painful dyspepsia had passed. The French have told that Napoleon was, ultimately, sent to St. Helena with the object of hastening his death. The chronic was not found under the conditions of some dyspepsia. English would dyspepsia consequently was there was suggested by the dyspepsia and weakness. There is probably a great deal of truth in the French view, and this way in which Napoleon's last year and days were spent in an agony in England. He was forced to be on the worst part of the island in a room and rough walls, the floor of which leaked through even after the Emperor's arrival. He lived in two rooms 15 ft. x 18 ft. x 12 ft. There were several of men. The waste of a time he was a table used to stand back water in with. The British Lord the Governor, indignantly supplied him, as it was with considerable men and women. In 1818 G. Meyer (the French surgeon) attended on him, reported that the dyspepsia was "very inveterate" had been greatly aggravated by the climate, deep drinking lack of exercise, and weakness to which the pressure was subjected. Later, then, had G. Meyer, recovered and a year later a young and inexperienced German, Jachensmarch, was sent and by his medical treatment

\* The French are, of course, that Napoleon died of cancer alone, and that the dyspepsia was in no way influenced by his condition, or vice versa.









the identification and classification of which will be greatly facilitated by the excellent drawings, whereby many various, minor details and other characteristics.

Thus up to date and comprehensively well produced book serves firstly as a method of study and for teaching and afterwards as a means of reference and classification which is simplified by the provision of a large illustrated index at the end of the book giving a brief eye view of the contents and more.

Each Order is dealt with in a separate manner as regards morphology, early stages, behaviour, relation to disease and control.

Of special interest are the parasites devoted to ruminants and man, which are particularly illustrated by clear drawings—also those on fish, fowl, bees, and birds.

The concluding section describes the control of the most serious of diseases, the various disinfection, breeding, phage, and prophylactic measures to be employed. The complete text of the descriptions will be found most helpful for reference, as also the work on nomenclature.

The book is dedicated to the memory of leading well known medical men, members of the medical profession who have died whilst investigating these diseases from which they suffer and spare, and should be the means of adding further knowledge and interest in this important branch of parasitic medicine.

Thus the work from the Liverpool School of Tropical Medicine, which has been produced at a special low price, will prove of the greatest value in the teaching and study of parasitology.

It forms a comprehensive study as to the major diseases and parasitic nature in the result of many years of experience and teaching, and will be recommended as a valuable work in all medical schools who are interested in bacteriology and tropical diseases.

In view of the high standard set by the firm of the press, we cannot but welcome the publication of the new 2 and 4th editions as public health and tropical hygiene respectively which are to be issued in 1939.

**Parasitology: Bacteriology, Zoology.** A Series of Diagrams on Transmitted Media for Teaching the Recognition of Medical Parasites of the Human Body. By J. E. Christensen, Deputy Medical Officer of Health for London. 1 volume. First Edition. London: Baillière Telford and Cox, 1 and 5, Mark Lane, Street, London E.C.3, Part I. The Thigh and Hip. Twelve Diagrams in the text. Price 3s. 6d. (post free).

Teaching anatomy by stick drawings as a method, whereby the different regions are built up from the skeleton, is the most successful method of giving students a true conception of the structure of the body. Mr. Christensen has adopted a similar plan by showing the various layers in cross and longitudinal transmitted sheets. The diagrams have been accurately drawn to scale and the most detail must not be expected. The region of the thigh and hip has been thoroughly reproduced in detail from

**Parasitology on Microscopic Examination.** By E. F. Combs, M.D., D.M.S., D.M.S. (Lond.), M.B.C.P. (Lond.), Medical Officer in Charge, Medical Department in Bartholomew's Hospital, South London. London: Henry Kimpton 1935, 242 pp. 44s. (Illustrations and Plates 12s. 6d. Post 12s. 6d.)

The 1929 edition of this handbook has been almost entirely rewritten and is considerably enlarged. It still, however, deals only with the widespread diseases (transmitted parasites), describing only essential appearance and essential methods of examination. There is nothing to skip. The author is one of those rare and valuable experts with the true teacher's interest and the gift of brief expression. There is therefore no highly technical detailed paper in the volume. On the





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page 44. History: Wood, in general, has a long egg (smaller than the egg of the other species) and a long, thin, curved tail.

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order for the Bureau of Mineral Chemistry, and as P. W. Kilgus, Jr., M. S., Director, University of Utah, Salt Lake City, Utah.

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go (principal, flexible, negotiable, and planning) are not to be negotiated in future.

It is a common mistake to think of the  $\mathbb{R}^n$  as a vector space.

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Year of Birth	Year of Migration	Year of Arrival	Year of Departure
1900	1900	1900	1900
1901	1901	1901	1901
1902	1902	1902	1902
1903	1903	1903	1903
1904	1904	1904	1904
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**1** I'm really sorry about what happened last night. I'll make it up to you.

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1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

For keywords: [in 1997](#), [in 1998](#), [in 1999](#), [in 2000](#), [in 2001](#), [in 2002](#), [in 2003](#), [in 2004](#), [in 2005](#)

at the time, the recipient was not the proposed transferee. I will discuss this issue

1. The 2008-2009 season was a record for the number of days with precipitation in the  
 2. season, with 114 days of precipitation, compared to the 100-day average.  
 3. The 2008-2009 season was also a record for the number of days with precipitation in the  
 4. season, with 114 days of precipitation, compared to the 100-day average.

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- 11.—Medical Records of Royal Air Force Personnel Admitted to Naval Hospitals and Civil Ships.

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## DEGREES AND DIPLOMAS

1. *Commissioner in the Palace* DVO DVOVA, for diploma of 1939.

## TRANSFERS TO PERMANENT LIST

1. *Commissioner in the Palace* DVO DVOVA, for diploma of 1939.

## PROMOTIONS

1. *Commissioner in the Palace* DVO DVOVA, for diploma of 1939.

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## EXAMINATION FOR PROMOTION

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All Communications should reach the Editors on or before the 1st of the month preceding the date of issue. It is especially necessary that should be typed in order to avoid mistakes and they should be addressed to the Editors, Officers of the Royal Naval Hospital, 10, Whitehall, London, S.W. 1.

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Advertisements for 1914 are now being accepted.  
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Journal  
of the  
**Royal Naval Medical Service.**

**Original Article**

**CARDIAC FUNCTIONAL EFFICIENCY IN THE YOUNG MALE  
ADULT\***

By FRANK LAMMERS, M. A. TRIP-LENDERS, M.D. D.S.

*Royal Air Force*

At the present time, eleven years after the cessation of the European war, there are 16,000 ex-Servicemen suffering from a condition called functional heart disease, and this fact appears to me ample justification for laying stress on the importance of a careful scrutiny of the cardiac vascular system as a whole, prior to entry to the Service. The problem is not merely the elimination of organic heart disease, but the equally important question as to whether the heart is likely to withstand the aerio-physical and mental stress inseparable from modern war, and it is the purpose of this paper to discuss some of the means at our disposal to secure this end.

In the first place, I propose to deal with certain points of value in routine clinical examination, then to deal with the differential diagnosis of doubtful valvular heart cases, and finally to discuss, how far it is possible, by simple and rapid methods, to estimate the degree of cardiovascular stability in individual persons, i.e. the likelihood of withstanding physical or mental stress without the cardiovascular system as a whole, showing objective or subjective deterioration.

**Clinical Examination.** (a) *Inspection*.—A minute or two spent on casual examination of the chest in a good light is never wasted. Palpation of the vessels of the neck, the presence or absence of thyroid enlargement, the general musculature of the shoulder, back and abdomen, reveal variations

\* Read at the Royal Society of Medicine, London, November 15, 1939.  
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it is, and well-marking of the apex beat, particularly in the heart region, should be noted as well as the character and position of the apex beat, and the presence or absence of epigastric pulsation—in a normal well-developed young adult it should be absent. The most aspect of both areas should be examined for visible pulsation of the innominate arteries, bearing in mind in this connection that an aneurysm can occur with comparative frequency in the young adult and not solely in middle age or later.

(d) *Palpation*.—The pulse of the heart should necessarily be good for pulsation of the heart as a whole, to determine the presence of thrombosis, if any, and the character of the apex beat prior to its more exact location by the hand. Having ascertained that this is the point, lower down and to the right, which definitely lifts the finger. If in doubt as to whether this is the fifth or sixth space, feel the ridge on the sternum formed by junction of the manubrium and xiphoid. The second space is immediately below this. An apex beat in the sixth space is an evidence per se that the heart is enlarged.

If epigastric pulsation is present and palpable, it may be due to two fundamentally different causes, viz. aortic aneurysm. If due to true aortic aneurysm pulsation it can be felt along the length of the abdominal aorta, and if traced with the apex beat, is found to be delayed. Hypertrophic pulsation is also a common accompaniment of the condition, which is generally of nervous origin and usually associated with cardiovascular instability.

If epigastric pulsation appears to be of aortic origin, a good method is to stand behind the patient and place the fingers of the left hand over the upper part of the left costal margin. If the hand can be felt beating downwards and upwards against the fingers it is suggestive of right ventricular enlargement.

Examination of the innominate arteries gives a far better idea of whether thickening is present or not, than does examination of the aorta. Not only can a finger placed at the circumference be felt, but the fingers can be run up and down the vessel to determine whether thickening, if present, is unilateral or symmetrical. It is as well to ask the patient whether he is right or left-handed, as early arteriosclerosis may be found only on the right side or on a right-sided subclavian and carotid artery. Volume and tension should be noted at the same time.

(e) *Pericardium*.—May be of value in regard to determining the size of the heart in a thin individual but it is at best an unreliable and misleading sign in well-covered or emphysematous patients. An apex beat definitely seen and fully related to the supply line in the fifth space, in an otherwise normal chest, is far stronger evidence of the probable absence of cardiac enlargement than a pulsation of diffuse to the right border of the sternum is of its presence. When the apex beat can be neither seen nor felt, positive of the X-ray becomes essential before enlargement can be definitely diagnosed. The orthostathograph is of the greatest value for

should rest on the scapula. It may appear on X-ray films as dark shadows in any direction parallel to the chest. The one in use at the United Medical Dickinson has a scale frame surrounding the tube movements and diaphragm. After a quick look at the chest as a whole, the operator is set down in 1.5 sq. m., and the outline of the heart and chest marked with a glass pencil on the screen, and a permanent record is then made on to hardboard paper. By this means the very considerable distortions caused by the narrowness of the tube in the chest is avoided and over the technique is mastered, the amount of error is within 1 mm.

The size and height of the scapulae, as well as the size of both scapulae and ventricle, can be quickly and accurately determined by placing the patient in the right and left oblique positions. The apparatus is not at all costly and is of great value in the accurate estimation of the cardiac area. This can be estimated from the drawn outline of the heart in the planimeter or more simply by taking the maximum transverse diameter of the heart which should be less than half that of the chest.

The variation in size and shape of clinically normal hearts is considerable and in a general rule individuals with a history of heavy physical work or continued athletes have larger hearts relative to the chest size than those of sedentary workers. Thus, after all, it only to be expected if the myocardium shows in the generally increased vascularity in these individuals. There is no direct evidence that physical stress alone is capable of causing damage to a healthy myocardium.

(4) Arrhythmias.—In any case of doubt the heart should be listened to with the patient standing, after exercise, and in the left lateral position.

(5) Arrhythmias.—The arrhythmias in the heart means all irregular alterations in rhythm, as by slow cardiac beats are delayed which might not otherwise be noticed at the wrist. Some arrhythmias are usually of no importance, and usually always disappear on exercise, but if extremely marked the rate can actually double with exercise, and such cases are usually always associated with other signs of cardiovascular disturbance. Extrasystoles are evidence of irregularity in the myocardium, and may be ventricular, supraventricular, nodal, or right and left ventricular. They occur most frequently in the left lateral position, and their diagnosis is usually easy by the compensatory pause that follows them, but occasionally numerous extrasystoles may be almost indistinguishable from sinus tachycardia. Not long ago I saw a case in which various doctors had made notes of marked irregularity for over ten years. It had been variously described as "mild arrhythmias," "extrasystoles," or merely "irregular heart," but, on electrocardiographic examination, the heart was found to be fibrillating. The other is a question but physiological rate of nature the day before I saw him had no cardiac enlargement and was in perfect health. Right ventricular extrasystoles are possibly the commonest form met with in the young which, and are probably, arrhythmias in origin, e.g. from pressure from a dilated stomach. They are relatively more frequent after

is most common in the young. Atrial and ventricular premature beats are also common in the young, but they are usually infrequent. When our attention is directed to premature beats, they usually do not seem to be easily distinguishable from normal heart beats, but if the number increases, they should be regarded with suspicion, especially if they are excessive, as this variety is a common precursor of muscular fibrillation. There is only one method of satisfactorily diagnosing a disturbed arrhythmia, and that is by the electrocardiogram, and the following records show various types of arrhythmias both appearing and disappearing in children.

(1) *First sounds*—Reduplicated first sounds are extremely common in the young child. A reduplicated first sound can be distinguished at the apex, it will cover 80 per cent of young adult hearts. The terms "biverted," "square," or "prolonged" first sounds are often applied to this condition. The variety of reduplication usually goes to the left lateral position. A reduplicated second sound is not as common in the standing position but can frequently be heard in the left lateral position after exercise. A triple rhythm is also of comparatively frequent occurrence at the apex in this position, without necessarily having any clinical significance per se. Hearing of reduplicated sounds after exercise, especially when associated with a frequently the case, with a poor quality first sound, a tri-beat rhythm, an increased pulmonary second sound or a triple rhythm at the apex is suggestive of myocardial weakness. This condition frequently occurs after acute infections such as diphtheria, measles and rubella, and can I think be reasonably regarded as evidence that the myocardium has shared in the general toxemia. The pulse is not necessarily raised and the result too is often missed on the stethoscope. In the absence of severe cardiac stress, it is rare for the heart to receive permanent damage, and recovery of unoppressed tone is usually a matter of a few weeks, but I feel sure that many cases of gross myocardial damage irreversible in later life date from some acute infection, followed too soon by severe physical stress.

(2) *Whisper*—One of the most difficult problems we have to face is the differential diagnosis of a reduplicated first sound at the apex, and the pericardial murmur of suspected valvular disease. A reduplicated first sound can produce a very good imitation third at the apex, especially when the first element is soft and the second short and sharp, and on auscultation it can be equally deceiving. Points of value in distinguishing the two conditions are—

(a) In favour of reduplication: (1) The absence of rheumatic history, (2) a normal second heart, (3) absence of an associated pulmonary second sound; (4) reduplicated first is heard best over a large area of the heart and often absent at the tricuspid area; (5) it is apt to disappear in the left lateral position or at any rate after an opening; (6) a big pre-excitation.

(b) In favour of valvular disease: (1) Rheumatic history, (2) evidence of mitral enlargement; (3) the pericardial murmur increases on exercise.

and in left lateral position. (4) second pulmonary sound usually unaccentuated. (5) the murmur is accentuated after exercise and the left lateral position and is usually localized just anterior to the apex-beat. (6) the pulse pressure is always small. (7) pulse volume is small.

A clearly reduplicated second sound whose second element is softer than the first one also clearly indicates a short aortic diastolic murmur, and it is associated, as it quite easily may be, with a lag pulse-pressure, a collapsing pulse, and capillary pulsation, all of which may be present, in the absence of any aortic lesion, it may often present equal difficulties in diagnosis. Although a high pulse-pressure of 160 or over is usually present in aortic regurgitation, the systolic is rarely over 160 and a diastolic pressure of 130/80 is usually as much evidence against it as a blood-pressure of 140/90 was in favor of it. A difference of up to .35 mm. between the lag and non-lag systolic pressures may be found normally the lag being the higher of the two, but a lag pressure of 40 mm. or more higher than the non-lag is strongly in favor of aortic regurgitation.

There is little doubt that in the past undue importance has often been attached to apical systolic murmurs and, there must be a large number of perfectly sound individuals who have been diagnosed as having valvular disease of the heart, whereas in practice there is nothing whatever the matter with it. Apical systolic murmurs other than those in the left lateral position can be detected in at least half the normal young adult hearts examined, as the disease affects the conduction system of aortic regurgitation, and they have probably no pathological significance. In the young adult there is to all practical purposes only one name of apical valvular disease, namely rheumatic infection of the heart, and if this could be safely excluded the assumption that apical valvular disease was absent could be safely made in the great majority of cases. Unfortunately not only one rheumatic infection comes apart from the joints, but the heart can be the sole site of the lesion. The fact remains that we should be chary of diagnosing apical aortic regurgitation in the absence of the supporting evidence. Right where aortic regurgitation undoubtedly occurs, after other aortic infections than rheumatism, due to the destruction of the aortic valve is a part of the general reparative process, but it has a strong tendency to disappear as the system as a whole throws off the effect of the trauma and returns to its normalcy.

I do not wish to imply that a loud systolic murmur partially or totally replacing the first sound, constant in all positions and conducted out to the axilla, can be disregarded. It cannot, but a soft apical systolic murmur accompanying the first sound and varying with position or respiration, in an otherwise normal heart, is of slight if any importance. Other systolic murmurs apart from those of congenital heart disease are too numerous to specify as distinct but two in particular are worth noting in the young adult: the aortic systolic is often accompanying hypertension, whether organic or functional and the mitral regurgitant, superfluous

moment, as often heard in apparently perfectly normal hearts over the distended area. This murmur is often localized in character. Dr. Bernhard Gould first drew my attention to it, and he suggests that there may be some connection between it and the well-known patches in the pericardium in distal heart pericarditis in this region. Its disappearance frequently in otherwise normal hearts would appear to rule it out of any serious clinical significance.

Having ruled out organics, discuss the estimation of the degree of stability of the cardiovascular system as a whole has there to be considered. There are many methods employed, centering chiefly on the effects of varying degrees of exercise on the blood pressure obtained in themselves but leaving the fundamental disadvantage that the time occupied in their performance is too long. Those with which I propose to deal to day are in common use at the Central Medical School in the examination for flying officers and while admittedly they are by no means perfect, they have the great advantage of simplicity, easy technique, standardization and short test period.

(1) Pulse Response Test.—After the steady sitting pulse has been counted, the patient stands up, and the immediate rise or fall is noted. A second standing pulse is taken at once in the left sternal space. The patient then puts one foot on a chair and stands upon it five times in fifteen seconds. The rise is then noted, and the time taken to return to the seated standing pulse noted. The pulse is counted throughout in five-second intervals. A good response is sitting pulse 75 per minute; standing pulse 95 and 75 after exercise 5, return to 75 in fifteen seconds. The sitting pulse alone, even if reasonably near, is no criterion of fitness as a pulse rise from 75 to 105 or 120 on standing is suggestive of aortic valve pathology. On the other hand, a sitting pulse of 85 which remains unaltered on standing and rises to 105 after exercise shows relatively a higher degree of stability of the tree. Physiological body strains, even as low as 45 per minute, are generally evidence of a high degree of cardiovascular stability. Those soldiers frequently in athletic competition in those engaging in long continued efforts such as mountaineering work and rowing, has been frequently ascribed—often erroneously I think—to the efficient training. They are in no sense morbidly abnormal and such individuals have learned from experience that they are capable of a higher degree of sustained physical stress than the average.

The average pulse of officers selected for permanent commissions in the Royal Air Force, as a result of their flying efficiency is rarely above 74 and usually below, and practically all the well known good pilots have varying degrees of tachycardia usually about 80 per minute and training is not as a rule a factor in these cases.

Tachycardia may be purely transient, as a result of the excitement of the examination, and if the pulse comes down to say 84 per minute during it, and the rate after exercise to 105 per minute it can probably be safely

control in the common double system of intermittent auscultation. The normal index of 90 : 60 is especially incompatible with slight pressure up to 100, not usually synchronous in shape and with marked or intermittent irregularities.

(2) *Blood-pressure.*—The ideal type of instrument needs to be available, and requires frequent checking against the mercury column type to ensure accuracy. A simple table constructed with a large hole has been in standard service many years in the Royal Air Force. Recently, an American instrument known as the *Sanitometer* has come on the market and it incorporates the broad gauge tube. Calculations of systolic pressure show only the method of half its value. The technique of accurate reading of the diastolic, with the stethoscope is difficult and requires considerable practice, but a very useful "tip" is the observation derived by George Lytton Steele as to restrict the patient to tell you as the mercury level is just below his systolic pressure and is falling, the instant he no longer feels the throbbing of the pulse in his arm. This point is the diastolic pressure. Three readings should always be taken and the pressure dropped between them so a patient will frequently show a systolic pressure of 140 or even 150 at the first reading which will come down to 140 or even 130 at the second or third reading. Such blood-pressure are purely emotional. The pressure should always be measured from 50 to 60 mm. above the point at which the heart is audible, as a blank area is occasionally met with above and below, which the pulse can be heard, and great stress may be made from time to time if this precaution is neglected. The normal blood pressure of a healthy adult under 40 varies as a rule between 120 and 140 systolic, and 60 and 80 diastolic. The pulse-pressure or the difference between the two, varies between 40 and 60. Small pulse-pressure in the normal individual runs down to 35 mm. or a most valuable sign of cardiovascular instability and are usually associated with a slow pulse. The significance of pulse pressure over 60 is a complete subject, but briefly an equivalence depends on the relative height of the ascending systolic and diastolic pressures. A rise of blood-pressure of say 120/70 usually shows other signs of cardiovascular instability and has a small fasting sugar. In those cases of this type at the Central Medical Establishment, the patients bled during the test and in each case a fall of 15 to 20 mm. was noted in the diastolic pressure. A blood pressure of 160/80, especially at the late "test" is usually temporary and emotional and is of small significance per se. A blood pressure of 160/80 particularly if it remains relatively constant on further readings is suggestive of an organic lesion, and indicates the need for further investigation such as renal efficiency estimation.

It has been found at the Central Medical Establishment, that rotation in a chair has taken to twenty seconds. The blood-pressure being taken immediately before and after, reveals the fact that the stable individual's blood pressure does not change materially, that transient and nervous

occupying 4.118 in is already too distended, and pulmonary vessels are highly stretched. An increased pulse pressure of over 20 mm. is immediately felt supporting the fact that in relation to flying is obvious. The large whole shows an appreciable distention ventrally but the slow pulse and small pulse pressure previously referred to is supporting the presence of a stable cardiovascular system. The momentary feature in the production of an required high distention are local organs—particularly from the lung—and over indulgence is shared.

(2) The Brown test, as used in the Royal Air Force, consists of blowing a column of mercury to 40 mm. and holding it there as long as possible. The pulse is counted throughout in limited intervals. The duration of the test to the fit individual is over 60 seconds, and an appreciable elevation in the pulse should occur during the test. The many abnormal compensated may occur, and their relative significance, neither is impossible to discuss them in the short time left, but some abnormal signs related from a more talked before, during and after the test illustrate some of the variations met with.

The conditions arrived at then is that the characteristics of a stable cardiac vascular system are a slow pulse, with a relatively slight increase in duration, frequently a tachypnoea, and a small pulse pressure which again tends to remain relatively constant on exertion. What are the other factors found associated with it? First and foremost comes a stable nervous system and a fairly healthy free from anxiety or psychomotor. These individuals also have a power of quick recovery from fatigue not shared by the world at large. The type of case which often works to recover from a severe cold or an attack of influenza rarely presents the above-mentioned characteristics.

Growth is a further factor of profound importance. The extensive involvement of the general body metabolism at puberty is a serious strain on the cardiovascular stability as a whole, and if this is followed by sudden rapid growth within the next year or two, it is easy to find an sign of its effects on the cardiac vascular system generally. The tall, aerodynamic youth is rarely as physically fit as one of average size. Difference can reasonably be made for this as the same degree of stability cannot be expected after a recent burst of rapid growth. Slight enlargement of the thyroid is frequently found in these cases, and its significance can reasonably be regarded as less than it would be in a smaller individual whose system has not been required to bear the same degree of strain.

Lastly a brief consideration of the nervous side of the picture, namely, the functionally deficient heart. It is not worth usually to those of poor physique and of a nervous temperament. The faulty history frequently reveals the presence of psychomotor and the nervous system is unstable. Enlargement of the thyroid is often found but is not constant enough to justify it as being regarded as one of the prime factors in the case. A history of rheumatism is occasionally obtained, possibly because it has



into a legacy of concealed age-related damage behind an "over-efficiency" and found organs probably play a part in its production, but the most important underlying factor of the condition seems to be a constitutional one. The essential quality necessary to the successful athlete or runner—namely, an inherited tendency to a high degree of cardiovascular stability—is lacking in these individuals and rapid growth in their "teens" seems almost invariably physical or mental stress, all tend to act as trigger causes in the production of that clinical picture so well known throughout the Services as a typical action of the heart.

#### SOME REMARKS ON THE EVOLUTION OF NAVAL HYGIENE<sup>1</sup>

By ROBERT DOUGLASS A. L. HENLY, M.D.

THIS paper is not an attempt to teach the principles of ship building, but, to afford to describe briefly a few of the hygienic problems which have arisen in the course of the evolution of the modern ship.

During that period great changes have taken place. The rules and customs of primitive man have been succeeded by ones and rules and customs have been devised to, such as there has given way to stress and iron has replaced wood. An increase in sea and overland travel on inland routes has started each stage in this transition. The advent of the turbine and internal combustion engines of electricity and of air has also have speed-making in naval affairs. Apart from other changes they brought about they all opened up new chapters in marine sanitation. The first difficulty, probably occurred when the frames of the open boat were boarded over to make a smooth deck to the vessel, thus forming a hidden space or ledge where water and filth could collect. The rivalry between Horne and Carrington saw the construction of large hygiene galleys, which were often complaint; decked over. Presently built for fighting like our warships to-day they too must also have introduced some problems in ship ventilation.

The salubrity of the seaman's occupation at the beginning of the nineteenth century opened up a new of ocean navigation and extended ship construction. Ships gradually became larger and stronger, decks were added, and they began to be used as permanent habitations. In the earlier decked ships bachelors were the only men by which an could get below. In it was not till about 1820 that partitions were introduced by a French shipbuilder at Paris.

In addition to being very inadequately ventilated ships were crowded and dirty. What we managed to get below was retained by

<sup>1</sup> Read at the Royal Society of Medicine, War Section, December 5, 1919. Reprinted by kind permission of the Royal Society of Medicine.

human exposure to the fire stack which was then frequently covered & protected from heat by fuel columns from the hoppers or by the construction of the mangle used for lighting purposes. The crews were generally poorly clothed and frequently without a change of clothing while the restricted water supply and absence of soap curtailed the opportunities for washing. In the case of Charles I it was complained that the crew stank so that one did not pass ships and so notice that they are ready to fall off.

It is little wonder then that the great voyage of discovery which began in England under the Tudor monarchs was with uncommon violence and florid tropical accumulation and return back. For nearly 300 years scurvy was the cause of the sea and it is estimated that over 5,000 deaths took place annually among our sailors from this disease alone.

Its final elimination towards the end of the eighteenth century is one of the first triumphs of preventive medicine and was largely due to the work of a naval surgeon. Dr Lind who in 1753, published a treatise on Scurvy. Fifteen years later Captain Cook put Lind's teaching into practice and kept his ships free from scurvy, a thing that had never been done before. Lind's hygiene was considerably in advance of his time and embodied many of the principles we still possess. Constant vigilance, daily personal inspection of his ships, cleanliness, dryness, and good food standards possible were some of his maxims.

To day scurvy is a rare disease on shipsboard and the only remnant we find of it in the Navy is the bone pain now which was first noticed by the Admiralty in 1795 chiefly in the case of Gilbert Blane, a surgeon of Lind's. The monthly issue of soap to seamen has also come down to us from Blane's time.

In addition to his treatise on scurvy, Lind (1734-97) drew up rules for ship hygiene and the prevention of typhus, then a prevalent disease in the Navy, owing to the custom of stowing ships with the contents of the pub. Just as the conditions on ships were those in ships were worse, but, as Dr Johnson remarked, "no man will be a sailor who has not been enough to get himself once put for being in a ship as being in jail with a chance of being drowned." Lind, however, persuaded the Admiralty to establish ship shops where men were segregated and allowed before being shifted to company ships, and succeeded in reducing the incidence of typhus almost. He also introduced into ships a small staff for making fresh water, the supply of which was always a source of trouble. The records of the early navigators furnished us with little information about fresh water intakes, their basic part, and the first land touched at, but contemporary accounts indicate that their supplies must have been above suspicion.

Water was carried in barrels in the hold of the ship or in casks on deck and was replenished as occasions offered, either by spending time and waiting the wind, or, if near land, by sending boats ashore to bring off fresh supplies.

Complaints about drinking water, especially, as regards its smell and

moist, were common and it was frequently blamed for causing disease. The first small which is often developed in the scale on deck was probably due to some kind of algae as there never seems to have been complaints about the larvae on the hull where the daylight necessary for the development of this form of life could not penetrate.

A similar state of affairs is sometimes experienced on reservoirs to-day where the numerous algae and fungi caused by the harping of the signal at one end make the water quite undrinkable for a few days.

Known as her "Voyage Round the World" in 1542 gave a good account of such an occurrence as the water obtained in the island of St. Catherine off Brazil.

In 1770 the *Admiralty ordered Lead*, and to be fitted in all warships, but this instrument was only capable of making very small quantities of water. About forty years later two-ton water tanks were introduced instead of casks for storing water, and we may regard them as the forerunners of the permanent compartments, the fresh water tanks, which are to day built into every ship. With the advent of steam early in the nineteenth century the supply of pure water to ships became a comparatively simple matter, and to day drinking water no longer causes little epidemics. There was a, however, taken to eliminate every chance of pollution. All water obtained from above is chlorinated and disinfecting is insured not by a mechanically cleaned pump but in clean overalls, hats and boots.

The use of steam also in a large extent solved the third problem by the reduction in the duration of voyages which it made possible. It was on ship resistance however that the greatest benefit was conferred first, as the same time accomplishment on internal space by the displacement and better room was made.

Apart from ports and harbors, the wind and sea for a long time the only aid to ventilation of limited use on sailing ships, it is still a valuable auxiliary method in steamships especially in tropical climates. The wind scoop was not introduced until 1840.

The substitution of Lead coils for the wind sail, as they borrowed from the French, was the next step, but though used early in the nineteenth century, they only came into general use with the building of iron ships. Later they were displaced by numerous top and water including ventilation. The replacement of wood by iron in ship construction was a tremendous advance and brought about many changes, two of which were of great hygienic importance, viz: (1) The much greater uniformity of internal space. (2) The control of temperature between decks.

Wood is a poor conductor of heat, consequently ships built of this material are not so much influenced by changes of temperature as those built of iron, which is a good heat conductor. In this respect the wooden ships had an advantage, but, on the other hand they were often leaky, cheap and mild as an account of the risk of fire they were seldom burned in iron ships, however, owing to heat insulation and convection currents.

of warm air the difficulty is to keep them sufficiently cool in warm climates.

This question of heat control has not yet been fully solved, though a great deal has already been done.

The late eighteenth and early nineteenth centuries saw many ingenious mechanical contrivances devised for the purpose of improving ventilation, but owing to the amount of labour involved in them and their cost they were abandoned as impracticable and are of little more than academic interest.

In the early days of steam, attention seems to have been concentrated entirely on mechanical attempts to exhaust the foul air from ships then on efforts to supply fresh. About 1850, special shafts in which lamps or stoves were lighted, were introduced to create an artificial updraught, clean air from the boilers was also utilized, by leading them into crews and ventilating shafts. The most valuable method of exhaust was, however, that that into the funnel from the ships' funnels and this was further aided when the funnel masts were introduced.

In the present, attempts have been made to carry air to various parts of the ship by means of fans from the crews which of course solely depended on the force of the wind. When therefore, in 1865, steam fans were first used to suck in air, the efficiency of this method was much improved. The introduction of electric fans at the beginning of the present century has done a great deal towards solving the ventilation problem in ships. It is now possible to draw large quantities of fresh air through long systems of trunking and to deliver it in any part of the ship where it is required. Exhaust ventilation is provided for in a similar manner, but owing to the possibility of drawing air from undesirable places care must be taken that the exhaust capacity does not exceed the supply. The modern tendency is to provide for single compartment ventilation so that the special requirements of any one compartment can be met without interfering with others.

In naval ventilation there are many factors to contend with which are not experienced to the same extent ashore, and one has to remember that ventilation in ships is largely a compromise. Natural ventilation is of course quite desirable except under specially favourable conditions. The substitution of internal space, the position and small size of some compartments, the limited cubic and superficial space, the absence of outside (in some ships) the upright and low-lying material of which a ship is built and the length and bulk of ventilating passages are some of the factors which make ventilation difficult.

Where standards of cubic and superficial space are quite impracticable, and though minimum requirements are laid down by the Board of Trade for the Mercantile Marine and also by the Customs and some foreign countries, in the Navy itself there is no definite floor space per man, but as far as possible 200 cubic ft. are allowed.

The fresh gas intake system of the air breathing apparatus being a vital opportunity for gas collection is constantly primed.

Spontaneous fires are not excluded, and spontaneous explosions are therefore required in the form of a fire-resistant explosion chamber (silencer) out of available space.

The limitations of cubic space have to a large extent been overcome in the use of objects that which can supply large volumes of air (damaged if necessary) and thus are now provided capable of supplying anything from 500 to 4,000 cubic ft. of air per minute.

The great difficulty in large quantities of air, especially in cold weather is of course the draught caused. No one will refuse a draught however unattractively produced, and it was found that heat was frequently stopped or seriously plugged up.

To lessen draught various devices have been adopted, e.g. the use of deflectors or baffles on the breathing system, directing the air into corners or unoccupied parts of the main deck—or trapping the inlet to within a foot or so of the deck—in all of which there are objections. The latest method, known as the portable burner system, consists of a ball-valve makes arrangements capable of movement in any direction, so that the opening in the hull, through which the air passes, can be directed anywhere. Indeed the opening is a rotary shutter, which can be opened or closed at will by means of a small lever.

With a little care each opening can be regulated so that though the general air supply and air movement in a compartment is not interfered with draughts can be practically abolished.

Heat—also so-called "old heat"—now another difficulty, especially in warm climates. Modern requirements have greatly increased sources of heat production in ships and such places as kitchens, galleys, boiler-rooms, bread-ovens, distilled water tanks, hot food stores, are now added to the engine and boiler rooms. This problem is being tackled and much has been done to lessen heat conduction from these places and to bring strong and enclosed spaces within the main hull zone. The new portable burner system and the provision of cubic feet are of great value in directing the ill effects of hot stagnant air. Lugging of bulkheads, steam pipes, and other heat conducting apparatus helped, while oil-fired galleys and boilers below-deck are also being adopted.

Dampness, principally between decks, is yet another important hygienic matter and one which is closely connected with ventilation. When one remembers that the respiratory and demand consumptions in atmosphere maintain amount to about 45 cu. per man each day, and that in addition there may be "steaming" from the ships' coils, deck washing, clothes washing, or accidental entry of sea water it can be realized that the risk to humanity on the main-deck is often very high.

The importance of dryness is, however, being recognized and the provision of lockers where clothes can be washed and of special drying

course of its preparation, the sheep is still a good deal of succulent, aromatic flesh immediately cooked. Back cloth, however, which had on the sail deck and in checking evaporation, tend to retard cooking.

In connection with food preservation various devices are appliances which may have possibilities.

Food probably more than anything else was the cause of discontent and trouble on board ship in former times and even to-day a rather serious conflict sometimes with the victuals.

Naval records give us the earliest accounts we have of the feeding of man and from which we read there seems to have been plenty of ground for complaint. As far back as the time of Henry VII, some species of naval rations, wheat and the products of the East India Company state that about the beginning of the seventeenth century a fairly extensive diet was at times provided for these ships.

Salt fish, bread and wine were the staple food of sailors until nearly the end of the nineteenth century. About that time salt beef and beer were introduced and later, then diet was increased by the addition of pork, peas, biscuits, butter and cheese. The base ration of a gallon a day seems enormous, but it must be remembered that the beer replaced water and that water was often undrinkable a few days or so. Fresh supply was usually taken. About 1800 the beer had become so poor that the Government began brewing it themselves and continued to do so till 1855, when the ration was abolished, but, before its final abolition, already, wine and rum had been an alternative one for some time.

At first each man received half a pint of beer every day, but in 1748 Admiral Vernon adopted the practice of adding water before noon, an important hygienic step of that period.

In 1824 the ration was reduced to a quarter of a pint and in 1855 to one-eighth pint, which as the quantity still allowed to ratings who eat ship's food was to take it up.

Provided it was all edible, the food issued would supply the necessary calories, but it contained no fresh vegetables, had a high protein content, and must soon have become monotonous. For close on 200 years there was little change in the Navy's food, but towards the end of the eighteenth century improvements were gradually introduced.

Lean peas, as already mentioned, was introduced as an alternative course in 1776, while two years later tea was substituted for the afternoon spirit ration.

About 1821 fresh meat, vegetables and sugar were added, while bread, if drinkable, was allowed in lieu of beer, rheumatism was also cured. About 1855, preserved potatoes were supplied, and four years later there was an increase in the amount of bread or biscuits and sugar.

In 1867 preserved meat, which had been previously used in 1814 and in 1850 was again introduced, as an alternative to salt beef or

park, when fresh meat was indispensable. But beef was finally abolished in 1907 and another year later milk disappeared from the naval diet.

The 1887 ration remained unaltered for forty years, but in 1931, at the behest of investigators by a special committee, a standard ration plus a variety allowance was brought in. This allowance, which could be used to supplement the ration as desired, permitted more variety in food stuffs, and thus eliminated the monotony which had been a feature of previous dietaries.

The principal changes made were reduction in the quantities of bread and meat, increases in the amounts of sugar and vegetables, and the addition of limited milk and peas or macaroni. These rations, with a few minor alterations, such as a decrease in the amounts of bread and sugar and an increase in the serving allowance in the diet are allowed at times.

Certain allowances are provided, if bread, fresh meat or vegetables are not available and usual modifications in the diet are allowed at times. When meat may be made of special work has to be done or if climatic conditions demand it, and special provision is made for broiling, bays. The present ration is sufficiently varied and elastic, to meet most exigent requirements, and, with the serving allowance, will provide the vitamins and vitamins necessary for health.

Requisite improvement in the quality and variety of the ration, the methods of cooking and storing food have changed a great deal. Formerly the position of cook required no special qualifications, but to-day both the cooks and bakers in ships are specially trained men.

Cooking conditions are also changing, and the old individual cook is gradually being replaced by general messing. In the old system, the men appointed one of their number to draw and prepare their rations and take them to the galley for cooking. This system, though it allowed of more individual choice and management in regard to food, attracted steadily to some extent, and was open to the objection that food was exposed on the mess deck and subjected to unnecessary handling.

The general messing is in charge of an Executive Officer, who receives special instructions in catering, and in that is a better position to buy cheaply and in greater variety.

The food is all prepared by trained men and various mechanical aids—such as dough kneaders, bacon slicers, potato peelers, and dish washers—are utilized. All unnecessary handling is thus eliminated, and through the serving allowance is left to the individual, he probably gets better value for his money.

In conclusion I may mention that the replacement of coal by oil has been of great hygienic advantage in ships. Cooking was numerous work and often productive of injuries. The new and dry bulk became dirty and the subsequent washing down tended to increase dampness on board. Since the introduction of oil, the lot of the sailor has become much easier, and

small quantities, 4, 10, 15, and 2000 mg have been used. Spontaneous abortion, 100 mg was used again, but was too compound with the food, and was given in pure oil and in coal-oil drops.

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### TREATMENT OF A CASE OF KALA AZAR

By Dr. S. S. CHATTERJEE

On June 15, 1950 a young corporal of the Royal Marines, aged 25, was admitted to N. Hospital, Malta, from H.M.S. Queen Elizabeth with the diagnosis of kala-azar. He had only reported with the previous day and vague a formidably was had been carried out on board to confirm the clinical diagnosis.

Since November, 1948, the patient had been employed on shore duty at the Castle signal station at Malta where also he had his dinner daily in the signal mess there. But, apart from that he lived at Patis, Malta where he shared a flat with two Indian sailors, who were similarly employed on shore duties. The flat was on the fourth floor and was completely dry and free from mosquitoes and sand-flies, as well as from ordinary flies which had kept it. The food was always prepared by the men themselves, and all milk, groceries, and food in general was brought from the local branch of the Navy Army and Air Force Institute. No animal fats were kept in the house, and no servants were employed as they did everything for themselves in the flat.

Patient's History.—The patient stated that until 1937 he had always been employed on the Fleet Station, except during 1932 and 1934 when he was posted with a Battalion of the Royal Marines in Turkey and Greece. The places visited included Constantinople and Hellespont, Chios, Isthmus, Souda Bay, Cape Helles and also Agios. He said that when he was there the Chiospest Poles were very common with symptoms usually severe, and that he was frequently bitten by the latter. Mosquitoes and sand-flies were also prevalent in the Tarsus Military Barracks where he was quartered at Constantinople.

He came out to the Mediterranean again in August 1937 and was employed on ordinary duties on board ship until November 1938. During this time he landed occasionally for recreation at Gibraltar, Valparaiso, Capatzen, Agostino, Sicily, Malta, Athens and Alexandria. After this he remained ashore at Malta and seldom went on board.



**HISTORY.**—The patient complained chiefly of great weakness, with loss of all energy quickly on exertion, while night perspiration was a marked feature of the case. The symptoms had been present for about ten days before he reported such. He also suffered from malaise and frontal headache, and thought he had lost a considerable amount of weight lately. For about ten days at the beginning of the illness, between



June 12 and 13, he had a severe intercostal boring pain in the upper right-hand region, which gradually he wore when his breath had not been properly renewed every day. There was no tenderness of the abdomen at any time, neither had there been any nausea, vomiting or diarrhea. There were no other symptoms of any kind. The appetite was good and the sleep bright and tranquil, which was associated with temperature of over  $100^{\circ}\text{F}$ ., was one of the striking features of the case.

**Physical Signs.**—The face and upper arms were immediately colored and easily palpable, the former extending to a band level with the costal margin and the latter down to the level of the umbilicus, while both organs extended forward to about two inches from the middle line. Neither organ was tender to touch, and their surfaces were perfectly equal and rounded. In consequence of this the abdomen was practically unmarked and the heart was displaced upward to the extent of one complete intercostal space, the cardiac apex being felt in the fourth space, well on each side of the nipple line. The area of cardiac dullness was not increased and extended from the second to the fourth rib, and from the right border of the sternum to the line of the apex beat. The cardiac sounds were somewhat soft and distant, the first sound being largely obscured by a blowing systolic murmur heard all over the precordium but not a colored mitral *s*. The second sound was louder, and was more marked in the pulmonary area than in the aortic area. The systolic blood pressure was 180 mm. of mercury, the diastolic blood pressure was 90 mm. of mercury. The pulse rate varied from 66 to 100 per minute. The lungs appeared to be quite healthy. The tongue, mouth, and nose were perfectly clean. The pupillary, conjunctival and deep reflexes were all normal. The patient himself was of very dark complexion with olive skin and jet black hair and with fairly cut features. The build was spare, and the predominance of the abdomen was accentuated in consequence of some muscular wasting was present, and later on, the patient looked both pale and frail, and stated that he had lost nearly a stone in weight since the onset of the disease. In spite of this, however, his mental condition remained quietly alert and his disposition was always bright and cheerful.

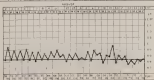
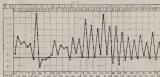
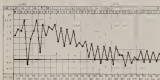
The temperature was markedly remittent. For the first seven weeks it ranged 100.5° F. at 6 p.m. and 99.0° F. at 4 a.m. On two occasions it rose to 103.0° F. and on another occasion to 105.4° F. These very high temperatures were preceded by a mild rigor and were accompanied by shivering chills, during which the perspiration could be seen dripping through the bed clothes and matting on to the floor of the ward. On the third occasion, the patient could feel waves of heat rushing through his body every few minutes, and was greatly exhausted by the heat of fever.

A double daily rise of temperature was well shown on the four-hourly chart, during the first fortnight of the disease, but after that time the diaphanous feature gradually disappeared.

**Examinations.** **Examination.**—No search for the chlamydial rods of the diphtheria!

It was to the bacteriologist tests and examinations, however, that one had to look for the confirmation and, if possible, for the proof of the nature of the disease. The following were issued out:—

1. Sample blood culture was taken which proved to be sterile. A search



leged specimens of blood were examined for the presence of the Leukemic Dietsche body in the leucocytes, but nothing was seen. Nuclei of lymphoblasts or leucogland cells were present on June 23 and again on August 11. The specimen containing the germinal cells was obtained from the patient in August 1916. The blood reaction was given with 300,000 leukocytes and no germinal possibilities were found in the blood. The composition of the blood was slightly anemic, and hemolysis of clotted blood specimens was complete in a solution of 0.85 per cent sodium chloride, as compared with a normal control, which required 0.45 per cent. NaCl for complete hemolysis.

11. Counts of blood counts were given the following means:—

	Red cells	White cells	Hb. in cc.	Speed of sedimentation	Time to settle 100 cc.	Leucocyte count	Hemo. in 100 cc.	Mean
June 23	4,000,000	1,000	8.5	50	75	47%	47%	100
July 11	3,500,000	2,000	7.0	70	45	44%	44%	100
July 23	3,500,000	2,000	7.0	70	45	44%	44%	100
August 11	3,500,000	2,000	7.0	70	45	44%	44%	100
September 11	3,500,000	2,000	7.0	70	45	44%	44%	100
October 11	3,500,000	2,000	7.0	70	45	44%	44%	100

The blood picture was typical of leukemia, with an increase and decrease in the number of both red and white cells. The leucocytes were a few of the counts averaged 3,000 white cells per c. mm., while the anemias averaged 3,500-4,000 red cells per c. mm., with a hemoglobin percentage of 71 per cent. In the differential leucocyte count the polymorphs averaged 40 per cent., the lymphocytes averaged 55 per cent. and the monocytes 5 per cent.

5. Leukemic Dietsche bodies were found in the blood on spite of careful examinations of centrifuged specimens. It was not considered unusual to perform a splenic puncture, on account of the patient's condition, and this was deferred to a future occasion.

Treatment.—The patient was kept in bed on a low diet and was treated symptomatically the temperature ran above 101° F. Though the latter seemed to have little effect in reducing the temperature, it gave the patient great relief. The chloroform pain was extremely controlled by securing a daily repetition of the therapy. The diet relief of the gastric frontal headache, which accompanied the bouts of high fever, patients were given as necessary, containing aspirin 30 gr., phenacetin 1 gr. and caffeine 5 gr. The most efficient treatment however was placed on the successive ingestion of salicylate of soda (Fowler's solution), and of salicylic acid. Morphia was given to increase the leucocytes, and Valerian's root pain was valuable as a stimulant and restorative.

The latter course was first given every fourth day on an average, the dose commencing with 1 gr. and being increased by 1 gr. at each ingestion until 2 gr. were reached. Under this treatment the temperature fell slowly, until the running ran continued under 100° F. The chloroform however was but short lived and on July 9 the temperature commenced

to rise again, convulsions occurred at 108.4° F. on July 22, and at 107.4° F. on July 23, and at 106.4° F. on July 24.

It was obvious that up to this date the barbituric acid and chloral treatment had not been really effective. Accordingly, the frequency of the injections was increased from every fourth day to every second day, and the strength of each dose of tartar emetic was increased from 2 gr. to 4 gr. given subcutaneously. From this time the patient never looked back, and the convulsions never returned.

Twelve days later the temperature had again fallen to 106° F. A month later it had reached normal and the patient was well enough to be allowed up for a couple of hours.

Towards the end of this period of treatment a new drug was introduced for trial and was substituted for the tartar emetic. This was No. 471 of von Heyden's preparations, the trade name of which is *Stilbene*. While its chemical composition is a meta-ether paracetoxy-ortho-phenyl stibonic acid sodium. It was given on alternate days, in doses ranging from 0.1 to 0.5 grm. The convulsive effect of the tartar emetic was fully maintained. The new drug has the reputation of acting far more rapidly than tartar emetic, and it is a pity that it could not have been tried during the earlier stages of the fever, as a smaller quantity of the drug is required for complete cure in well-run epidemics, and as it is more readily administered, being put in sterile capsules, each containing the exact amount of powder required for each injection.

The intravenous injections, both of tartar emetic and of stilbene, were usually made up to 50 c.c. with distilled water, freshly sterilized on each occasion. Doses of under 1 gr. of tartar emetic and the dose of 0.1 grm. of stilbene were only made up to 5 c.c. Injections of over 10 c.c. of fluid are subcutaneously better and take a long time to give. No insect was taken within two hours of an injection. The rate at which the injections were given was 1 c.c. in eight seconds, later on, a rate of 1 c.c. in five seconds was used, as no ill effects followed the former. No certain influence the injections in this patient at any time, but occasionally symptoms of poisoning appear, the first of which is usually a short, sudden uncontrollable spasm of coughing, associated with a sense of constriction in the chest, while muscular pain, nausea, and vomiting uncontrollable vomiting or diarrhoea are other less common but important effects. If any of these symptoms occur they usually commence within two to five minutes of the injection. The dose of the drug should then be reduced on subsequent occasions, and eventually it may have to be discontinued altogether.

The total amount of tartar emetic given in this case was 224 gr., the effective dose being 3 to 14 gr. every other day. With regard to stilbene, the effective dose appeared to be 0.5 grm. every other day, only 1.1 grm. was given at this hospital, however, as the treatment was continued elsewhere.

The immediate effect of these drugs on the patient's general health, as

that is, for longer than previously. Accordingly, it was most striking. The final condition in the 3 hours after the effect on the liver and spleen. As far as could be noted clinically, a steady increase in the size of both organs was maintained for a full two months from the onset of the disease. Further, a distinct macula in size, together with an appreciable clearing of the glomerular tissue, was noted on the removal of the organs examination of them on July 22, together with a slight darkening of the skin on the face.

No diminution in the size of the liver and spleen was noted until August 12, when both organs were felt to be both smaller and firmer to the touch than previously. The amount of this reduction, however, was very slight and the tearing of the organs shown in the attached sketch was taken after this date and when the patient had already been allowed up for a couple of hours daily.

The patient had been awarded by medical survey on July 26, but was not well enough to travel until August 28, when he took passage to England on H.M.S. *Porchester*.

It is interesting to note that an ulcer of the left ankle had appeared on March 18, 1929, for which he had been treated at first on board H.M.S. *Queen Elizabeth*, and later in H.M. Hospital ship *Worce* from April 22 until May 22. In the light of subsequent developments it seems quite possible that this ulcer may have been the symptom of dormant leishmaniasis, commonly known as *oriental sore*, and that his present illness may have been a generalized infection of the body resulting from it.

## A COMMISSION IN THE NEW ZEALAND NAVY

By ROBERT GORDON S. HERRICK, R.N.

LEAVING Christchurch in H.M.S. *Dorset* on June 10, 1937, we arrived at Fremantle after ten days seven of which were the most unpleasant I had ever experienced—the weather was bad and I had been sufficiently long ashore to have completely lost my "sea legs."

After two days there, we proceeded to Fremantle and thence to Perth. The total length of the *Perth* Cruise is forty-eight miles and the passage requires about eight hours.

Ships are fitted, almost sightly, but by India to a lake, which has been developed by a dam at the Atlantic end, and extended at the Pacific end by a cutting through a hill—the Colaba Cut.

At the lake, each electric light standard has a platform, perched on the top, three birds sit on each other that one imagined they were a part of the standard.

The boat in the Golden Gate was when going to San Francisco on the high sides of the cutting.

After two days in Panama, during which we visited the old city of Panama, which was ruled and looted by the pirate Morgan, and various places of interest, including a stadium for professional boxing after electric lights, we sailed for Valparaiso on board the *Morgans* Group belonging to France. There we met and sailed from the New Zealand sub-commander Natus. We had a few hours' shore, where games were kindly provided by the administration and the few Europeans on the island.

From Valparaiso we proceeded to Tahiti, where a dance the first for many years was given in our honor at Government House.

We eventually arrived at Auckland, New Zealand, early in August, after a voyage of two months.

The officers kept fit while at sea by playing deck hockey, weather permitting, and in the tropics canvas balls were rigged on deck for shuffles and runs; these were much appreciated by all.

New Zealand lies approximately between latitudes 34° and 46° S., about the same latitude as that of Italy and Tunis.

The Navy consists of two "B" class light cruisers, H.M.S. *Philomel*, a tender and an oiler. The tender is used as a training ship for R.N.V.R. ratings. The oiler carries oil from Galapagos, and aids New Zealand Naval ships during long voyages in the Pacific.

In addition to the above ships, there are two ships based on Fiji, these vessels belong to the Imperial Government and come down to New Zealand during the summer months.

The New Zealand Naval base is situated at Devonport, which lies in the harbor opposite Auckland and where there is a small dockyard with a dry dock, and a Fuel Quarters.

H.M.S. *Philomel*, from which the names have been removed, has alongside and acts as a barracks and training establishment for boys.

On the New Zealand station, there are five medical officers: three for the New Zealand Navy, and one for each ship.

The normal routine for New Zealand cruises is cruising around New Zealand in summer and in winter, visiting as many British Islands in the Pacific as possible, and when the weather permits, visiting the Australian Fleet usually, alternately in New Zealand and Australian waters for recreation, &c.

Quarantine is carried out frequently at Howlands Hall, an excellent commanding ground about thirty miles from Auckland.

Our first summer cruise around New Zealand, in January, 1930, was interrupted by orders to proceed to Samoa, where the mission was becoming threatening and had been putting up passive resistance for some time by refusing to work or to pay taxes.

We visited about 150 who were given letters of appointment but were subsequently released. Here, we found the heat on board very trying.

While in Samoa, we took the opportunity to visit the *barrenness* tomb, which is situated on a hill about one mile from the residence, which is now Government House.

During the winter of 1910 we visited many beautiful islands, and proceeded to Honolulu where we were met at the wharves by a number of Captain Cook, who had discovered the Hawaiian Isles half a millennium ago.

The Coral Islands of the Pacific are very beautiful, the white sand being in contrast with the blue of the ocean.

The current here by the production of tides, and there is also great fishing in some of the lagoons.

In the winter of 1910, the two cruises visited Australia.

The Fleet commanded by Harvey Dap in Queensland, and crossed out various in this bay for ten days.

Afterwards, we visited Brisbane, Sydney, Melbourne and Hobart.

In each State which we visited, His Excellency the Governor gave us a reception in State in our honour, and many other honours and water drives to places of interest were arranged.

In September we returned to New Zealand, and on the 13th of that month, most of the officers and crew transferred to H.M.S. *Porpoise*, which was due to return to England for a long visit, and on October 1 we left on the latter ship for England.

There were many old islands in the ship left the wheel in Auckland through which islands visited on our return voyage, we called at the Chalkpore Group. These islands are situated on the Equator about 600 miles off the west coast of North America, and belong to Ecuador.

They had been uninhabited but on one island we discovered a cave, and women—Germans, who informed us that they had used of construction, and were going to spend their lives on the island.

There are well cattle on this island, one of which I shot. We steamed it and crossed two quarters back in the ship, a distance of eight miles.

Another island in the same group was covered by wild goats, supposed to have been the result of a shipwreck.

On this island are great turtles and bands: the turtles are about four feet across and the bands about four feet long.

I brought one of these turtles intending to present it to the London Zoo, but after carrying it about a mile I got tired and released it.

On this island all birds and animals are extraordinarily tame.

Goats will allow one to come up quite close and I have had a large hawk perched on my walking-stick. A number of gardens of Eden, the two Germans playing the part of Adam and Eve.

In Panama an epidemic of smallpox was reported, and orders were issued that officers and men working in land could require to be vaccinated unless they had been done within the previous twelve months.

A few officers and about fifty men responded to be done, the commander preferred to stay on board.



In the Atlantic, we sailed on December, Madras and Calcutta, and arrived in Singapore on December 1.

About one-third of the sailors in the New Zealand Navy are New Zealanders: the remainder, and all officers, are lent from the Imperial Navy for a period of three years.

The sick quarters have accommodation for malarial, venereal and tropical cases, and an isolation block for victims of more infectious diseases—e.g. typhus, typhoid, etc.

Accommodation for more serious systemic diseases can be arranged with the civil authorities.

Major operations on men are carried out at the general hospitals in the various towns, the late war programme for 1000 per day in different hospitals.

Accommodation for officers has to be arranged in private hospitals, as general hospitals have not accommodation for private cases.

There are dental clinics in general hospitals, but they are fully occupied with the civil population, and arrangements have been made with certain dentists in most of the principal towns to undertake dental work for the Navy at contract prices, as there are no naval dental surgeons.

The question of building a small hospital at Singapore is being considered, and a plot of ground on a cliff overlooking the dockyard has been selected as a suitable position.

I was asked to draw up plans for a small hospital to replace the present sick quarters: this I did just prior to leaving New Zealand.

I treated the case of a native of Port Louis, one of the French Sea Islands, whom I was asked to treat.

This native had a badly pointed thumb, by which I brought him on board, gave a general anaesthetic, and opened up the thumb.

He did not understand any English, and he had no idea what I was going to do, but he tolerated without any protest.

It represented me at the highest conference which a native must place in a European.

While on the subject of operations, a lad came to the sick bay on the night before we arrived in Hongkong complaining of abdominal pain, but without any localising signs or symptoms. When I saw him next morning, he definitely had appendicitis.

I sent him up to the local hospital where he was operated on successfully, and a very neatly informed appendix remained.

I persuaded the hospital authorities to let me have him back when he sailed about ten days later.

#### WATER ON THE ISLANDS

Tap-water being run by hot oil the east coast of the north end of South Island. The Bay of Islands is the favourite place, January, and February, being the months for this sport. Males shark and sword-fish are the best catches, and weigh anything from 500 to 1,500 lb. The big game



but some of the things in these countries—some of the things which might have held the end of the war.

Plumbers have been introduced many times but they tend to do out. It is stated that some which were imported to keep down rabbits, are responsible for their destruction. There are also Californian quail.

Doves have become a pest in some districts and the Government will pay 5s. 6d. per bird. It has been found that they are the best of young birds which independently do not, therefore, at times they would destroy New Zealand of its timber. Monks and Wigeons have also been introduced and they are reported to be doing well, but as they live in the more mountainous and wooded parts, it is difficult to get wider ranges of them, and almost impossible to get a head out when one is shot.

There is also wild pig, the ancestors of these were introduced by Captain Cook about 120 years ago and they have spread all over the two main islands. Many farmers do not like them as they will eat young lambs.

I have had several days pig hunting—very hard work, as they live in the most inaccessible parts of wooded country.

Pig hunting is done with the aid of dogs—any type of dog will do as long as he has sufficient courage to hold up the pig.

An ounce or two of small is not necessary as the pig is rather obstinate. When the pig is held up the skilled hunter will move courage this when goes up, and make him with a knife.

There is most perfect performance as an old lion when caught in a very dangerous situation. The more anxious hunter shoots him with a rifle or revolver.

There is some game which the young lions and eagles have and then release them in hopes of killing them when full grown.

The best of the mountain animal is more delicate than that of the low. Water sports can be had at Mount Cook and Tangaroa Mountain, the source of abundant water.

#### PLANTS OF INTEREST IN NEW ZEALAND

**Sponges.**—The greatest Sponges are well worth a visit. They vary in temperature and chemical composition, some having a temperature of about 80° F. Some of these sponges have a wide reputation for the treatment of rheumatism, and many other diseases, and patients from all over New Zealand, Australia and America, may be met there.

The Cliffs on the West Coast are well worth visiting, they compare with the fields of Norway.

Milled is the most impressive, it is a success, and the cliffs rise up above for some thousands of feet, the depth is such that ships cannot anchor except in the narrow end. The other sounds of which there are many are less impressive, but those I considered more interesting.

My acquaintance in the New Zealand Navy passed all too quickly, and I left New Zealand, and the many friends I made there, with regret.

OPTIC AND EFFECTS OF ULTRA-VIOLET RADIATION IN  
DIPHTHERIA\*

By HENRY LESTER GAGE

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**Abstract.**—Little is known about the mechanism by which bacteria are destroyed by ultra-violet radiation, and especially that due to the longer wavelength of ultra-violet contained in sunlight. The following have been noted: (1) that the time from the infection and the treatment regarding infection is extremely important; (2) the results of practical experience with these bacteria with respect to penetrating the membrane. The work at Cornell University was almost finished before its progress.

**Introduction.** Diphtheria by radiation has the appearance of certainty of a chemical treatment and can leave no doubt as to its ability to anyone who has performed a successful work on experimental agents, such as bacteria or human infection. In the (1) disease, such as common cold, tuberculosis and pneumonia, the effects of the radiation are not so clear cut or have been so completely stated that the value of the treatment must be assessed by these having long-term in the field. No attempt has been made to describe the high speed and average made possible by certain artificial sources when applied to a cultured pathological conditions. The detailed phenomena experienced with these and other physical therapy devices is familiar with their use, but they may be the potentialities of damage and must be handled by the experienced.

When in 1819 and 1908 Hildebrandt showed that ultra-violet rays, not would be suitable, and in 1910 Dr. Alfred F. Ross pointed out that infection in children could be cured by frequent short exposures to the sun's rays, and delivered this by reports of the natural treatment of diphtheria showing that the amount of available natural sunlight was a dominant factor in the ability the need of an ultra-violet transmitting glass lenses immediately apparent.

The wave length of the radiation needed to cure infection was shown by Dr. Ross to be in the ultra-violet. Direct outdoor sunlight was effective, while sunlight passing through thin glass or ordinary window glass was ineffective. Sunlight reflected from a white surface was beneficial but rather weak. An arrangement by the use of glass filters on comparison with the quartz mercury arc showed a considerable increase in effect when a filtering from a filter transmitting but a trace of the 0.400  $\mu$  and 0.405  $\mu$  mercury lines to a filter which transmitted a substantial portion of these lines. Dr. G. H. Hughes, of the Department of Physiology, Cornell

\*Presented by the local physicians of the University of the District of Columbia, and published before the Twenty-Ninth Annual Convention held in Philadelphia, Pa., 1934, and by the author in the *Journal of the American Medical Association*, Vol. 102, No. 1, p. 10, 1935, and in the *Journal of the American Medical Association*, Vol. 102, No. 1, p. 10, 1935, and in the *Journal of the American Medical Association*, Vol. 102, No. 1, p. 10, 1935.

Therefore, we did not obtain the usual 1:1 representation of light flux with the honey bee. However, we have no explanation.

In the Mayfield's (1951a) experiments, the honey bee, not well, has  $0.02 \mu$  but with the shorter wavelength (ultraviolet) we found in that the product of the quantum transmission by the transmission of the glass for the  $0.003 \mu$  was a constant. The experimental results did not agree with the original assumption, but could be explained if the sole effective wavelength was the neighboring line  $0.008 \mu$ . It does not necessarily follow that with a continuous light source such as sunlight or certain flame colors are other wave lengths in that part of neighborhood are not the effective, or possibly wave lengths occurring in gaps between the sensory lines. It is not to be concluded that shorter wave lengths, such as the  $0.003 \mu$  sensory line effective in the structure of spectrum, would not be used for longer objects or objects, such as white rats, but it is certain that with darkness, when the visual processes seem to come mainly from the light incident upon the legs and wings, the shorter wave lengths do not contribute appreciably to the effect.

Up to the present time there seems to be an apparent discrepancy in the wave-lengths model in the case of vision as determined by experiments with sunlight and with the sensory line. The discrepancy is small and will require critical analysis of present data and further experimental studies before greater confidence can be attained. The evidence from the Mayfield's experiments with the quartz mercury arc with different filter colors also show an overwhelming preponderance of the effect is due to the  $0.008 \mu$  sensory line. Although Dr. Mayfield does not realize, an analysis of his data made by three independent people reveals that within experimental error the entire effect may be attributed to this line alone. Whatever effect the line  $0.003 \mu$  or longer wave lengths or the line  $0.005 \mu$  or shorter may have could not be more than 3 per cent of that of the  $0.008 \mu$  line. With evidence on the other hand the energy at  $0.008 \mu$  is so much greater than at  $0.003 \mu$  a much smaller efficiency of the longer wave length would be counterbalanced by its greater energy. Moreover, the sensory arc gives no evidence as to the effects of radiation between  $0.003 \mu$  and  $0.008 \mu$ . Considerable energy between these two points is to be found in various. Charles Valley shows ratios of energy in quartz mercury spectrum for the  $0.003 \mu$  compared to that for  $0.005 \mu$  of energy is one. When the sun is distant as it is at present time as much distance through the atmosphere the ratio calculated from his data becomes 418 to one. The interference effect of coherence of the standards is still present.

Dr. Arthur H. Hubble has taken photographs of the same spectrum at different altitudes at different times of the day and year. In his photograph the spectrum apparently terminated at  $0.008 \mu$  in December and  $0.003 \mu$  in June. On cloudy days the limiting wave lengths are  $0.003 \mu$  and  $0.005 \mu$ . The possibility therefore remains that with a continuous

space such as muscle, while the wire length 4.5 mm may not be effective, some greater wire length, say between 0.200  $\mu$  and 0.115  $\mu$ , having definite effect, might open some into play.

HARRIS, RICHMOND, LACE, or RICHMOND—That the content of calcium and the related tissue concentrations are dependent upon the heat of available sunshine is now becoming recognized. Here pointed out the unusual role of phosphorus in the blood of human subjects. Increased phosphorus or low calcium content of the blood in growing subjects is followed by rickets which can be cured once these elements are restored by having an abundance of these elements in the diet together with the addition of vitamin D in the form of cod liver oil, irradiated ergosterol or by ultraviolet irradiation. Tisdell, experimenting with rats exposed to sunshine for two hours daily at different ranges of the year found a rather sharp increase in the effectiveness of sunshine between the last of February and the second week of March, and between October 31 and October 31. When the sharp increase occurs the sun's rays already has descended from 35° to 15°. Working during the spring and summer only day variations in the morning and afternoon, increasing and decreasing when the sun has reached different situations again shows that 35° is a dividing point in the potency of sunlight. A study of healthy children reveals that in those children born where the sun never is below 35° in winter rickets is almost unknown, whereas in northern cities where the winter sun is less than 35° where the horizon of noon rickets prevails to an increasing extent as one goes northward.

Tisdell's experiments show a protective action of sunlight upon rats even when the sun's altitude is less than 35°, but two-hour daily exposure is then useless in this respect. The data on incidence of rickets in northern cities do not show the sunshine to be unable to prevent the rickets in human infants if deliberately exposed to what can there be but rarely that the content considerably increased in often sufficient.

Dr. Kathleen Ogle Vaughan reports a striking condition in the Kachhar Valley, Northern India. The women of stature of the higher classes are by custom custom veiled indoors. The people women, having the same diet as the men and children, suffer from a peculiar softening of the bones known as osteomalacia, due to withdrawal of calcium and phosphorus. There often mistakes for rheumatism as a left the children especially the girls become stiff like men, gradually stiffer and the weight becomes a complete cripple. The children go out in the sunlight and rickets is rare among them. The trouble sometimes among girls when, at an age of 8, rickets is started upon. Among the middle class women open upon a sunny court and among the poorer classes working outdoors the rickets does not occur.

As it is hardly practical to expose babies to sunshine constantly during the winter months, many of the significant experiments have been conducted indoors allowing the sun to shine through windows glazed with

after water-insulating window No. 12, Figure 7. Window No. 12 is the special case in the test-patient department of the Children's Hospital, Boston, Mass., organized for treating children exposed to sun suffering from rickets in winter months transmitted by windows glazed with leaded glass, 3 mm. thick and two kinds of ultra-violet transmitting glasses with slightly differing surfaces have designated as glass A and glass B. Glass A is the thickness used has a transmission of about 80 per cent, and glass B perhaps 60 per cent transmission of the 9-4000 Å mercury line.

The following is a summary of the results of treatment of佝偻病 children with windows transmitted by different window materials, taken from a report by Dr. Wynne as "The Prevention and Treatment of Rickets," published in the *Boston Medical and Surgical Journal*, vol. 60, no. 1, September 5, 1917:—

Case	Sex	Age	Window	Hours window	Result	Remarks
1	C	F	Fig. 12	Dec. 17 to Feb. 10	100	Spontaneous healing
2	W	M	1	Dec. 10 to Feb. 10	100	Spontaneous healing
3	W	M	20	Dec. 10 to Feb. 10	100	Spontaneous healing
4	C	F	10	Dec. 10 to Feb. 10	100	Spontaneous healing
5	W	F	10	Dec. 10 to Feb. 10	100	Spontaneous healing
6	C	M	10	Dec. 10 to Feb. 10	100	Spontaneous healing
7	C	M	10	Dec. 10 to Feb. 10	100	Spontaneous healing
8	W	M	10	Dec. 10 to Feb. 10	100	Spontaneous healing
9	C	M	10	Dec. 10 to Feb. 10	100	Spontaneous healing

It will be noted in Case 1, column 4, that the window treatment covered the period from December 17 to February 10, when the sun was hottest. The high transmission through the special window gave 90 per cent of the ultra-violet present in the window. The patient was strapped and placed in the spot of window as much as possible, which averaged two hours twenty minutes daily. X-ray examinations of the wrist bones showed progress in healing, definitely noted in the published photograph after the third week following a total of fifteen hours exposure to sunlight between December 17 and January 5, 1917, when the distals of the arm is healed.

The other cases were exposed mainly in the early spring, but complete healing was recorded in all cases where high transmission material was

used, either quartz or glass A. Glass B (1) is a bench-top type in the two-way black stage between tubes 4 and 7. That sunlight is sufficient to cause growth is indicated by experiment 4, conducted by the use of the 4 which showed a better improvement after being transferred to the floor window. Two weeks during which there were twenty-five hours of sunshine resulted in a definite improvement.

The poor showing of glass B is due partly to its lesser ultra violet transmission, although its spectrogram shows the presence of the 25000  $\mu$  line of the mercury arc and partly to the black stain of the subject. The diffusion due to the antihelical surface was probably not serious, as the large circle was fairly close to the windows and the diffusion, when reflected in streams, was seen only a small angle.

With ordinary window glass (class 3) no improvement occurred during a time of exposure. Improvement quickly followed its transfer to the quartz window.

Todd reports that two-hour daily exposures of rats to open sunshine between 11 and 1 o'clock shows benefit but not cure of rickets in the weeks before March 1, but a rapid increase after that date. Cases were required to maintain sun and skyshine. They were covered with opaque cloth and occasionally heated with carbon lamps placed below the floor.

The antirachitic effect of skyshine is approximately one-half to two-thirds as much as sunshine and skyshine together—since 11 to 1. The control or comparison included both sunny and cloudy days, during which direct coverage and more than one-half of the total time between 11 and 1 fell on sunny numbers.

It is likely as appears to be capable of curing rickets providing nearly half of the sky hemisphere can be seen from the point of application. The small fraction of the total sky area which is visible through the ordinary window opening, even if concentrated in the form of window glass is used, can hardly adequately substitute for sun or rickets. Based on due to ultra violet coming, it can give rickets and therefore only be expected either when overhead position or non-structure allows light to come from a large portion of the sky and/or ultra violet transparent glass is used, or when taking in the path of a stream coming through an open window of one glassed with an ultra violet transmitting substance. This was also pointed out by Ernst H. Clark, after measuring ordinary ultra violet finding the ratio of outdoor to indoor illumination, and calculating therefore the indoor ultra violet.

L. F. Hawley and L. C. Morse, working with chickens attempted to measure the maximum damage of ultra-violet from a quartz mercury arc and from sunshine which would give as good results as when the chicks were fed with cod liver oil. The conclusion reached was—

- (1) An average daily exposure to direct, instantaneous sunshine at 40° N. latitude for 15-20 minutes was sufficient to prevent the development of rickets in chicks and to produce normal growth



up to eight weeks of age. Whether or not an exposure of shorter duration would give equally good results remains yet to be determined.

- (3) Irradiation from a new Culper Street quartz mercury vapor arc, A C, at a distance of 30 cm. and with an equivalent D.C. operating voltage across the arc of 50 volts for a daily average of 9.1 minutes was sufficient to produce normal growth in chicks up to eight weeks of age, but some retardation of the development of chicks was obtained. Complete protection was obtained by irradiating for an average of 18.7 minutes daily.
- (4) The effectiveness upon chicks of irradiation from a quartz mercury vapor arc, A C, at 38 cm. and with an equivalent D.C. voltage of 60 volts was not found to be materially greater, if equal time exposure to strong incandescent radiation.
- (5) The treatments used in these experiments gave no positive indication of any difference in the effects from exposure to direct sunlight and irradiation from a quartz mercury vapor arc. However, the results of repeated observations indicated that the chicks in the sunlight group possessed greater vigor and muscular pliancy than the chicks in the mercury arc group.

The best exposure time required with incandescent, quartz irradiation have uniformly indicated and related themselves to develop in the chickens, but with the lesser available alternatives in nature, together with the cold weather increasing the difficulty of getting what sunlight there is, the importance of investigating the direct effects of water radiations passing through of two radiat transmitting glasses resulted in a series of experiments which will be considered shortly.

H. J. Stone, working under the direction of L. C. Haines and H. F. Haines, at the Poultry Department Cornell University, Ithaca, N. Y., is attempting to ascertain the relative value of some water exposures, depths for raising chicks. The exposing pans on the north side of the transfer house are 4 ft. square and are heated by steam during cold weather. The window frames are tilted 45° from the horizontal so that the sun's rays are perpendicular at the time of the exposure. Each window is covered with approximately 14 sq. ft. of transparent material. Common green window glass was used to glass one window and three other radiat transmitting materials were used to cover the other twelve windows. Material A, slightly blurring, according to the data of Dr. W. W. Culbert, transmits 90 per cent. of the radiation of the 0.882  $\mu$  line of the mercury arc. Material B, clear sheets, 55 per cent. when new and 35 per cent. after a few weeks' exposure to sunlight, and material C, considerably blurring, transmits about 30 per cent. The chicks were so close to the window that difference should cause but little loss in effectiveness.

Chickens fed on a normal diet will develop yellow bodies, green some approaches faster such as cod liver oil or when water radiations. Some

*John R. Hunter: Effect on Virus-Tobacco Infection, in *Deceptio**

that natural look is what I call a very subtle, but it is a fact, however, not a matter of principle. The structure in this organism was not a very good protection against infection, but not very effective against infection. The first experiment showed exposure of from one-half to four hours daily, under each of the four kinds of windows. The season of the year was from December 22, 1927, to March 12, 1928, i.e., the twelve weeks following the start of the year. The exposures were made each day according to weather and included windows and closed for a period of about 10 hours. Except in the case of window glass there was up nearly good protection against infection with material A, one half hour daily exposure; material B one hour; material C two hours; common window glass with four hours daily exposure did not however afford protection from infection.

The second period of twelve weeks immediately following the spring equinox, March 21 to June 24, 1928, showed complete protection against infection with material A, ten minutes daily; B twenty minutes daily; C thirty minutes daily, and even protection, nearly but not quite complete, with half the above time, i.e., A five minutes; B ten minutes; C twenty minutes. Window glass, fifty minutes daily, was shown to protect from infection from sunlight.

The third period June 25 to September 24, 1928, after reorganizing the plan and slightly improving the test, gave complete protection with material A, or ten minutes; B or ten minutes; C or ten minutes while those exposed under window glass twenty minutes daily were practically the same as those kept away from the light.

From first three experiments demonstrated how small was the amount of light which required for the infection of the stock, as well as the structure necessary for the infection which was required.

The fourth experiment six weeks before to six weeks after the winter solstice, November 11, 1928 to February 1, 1929 was again carried on to test and the exposure periods shortened as to show significant difference. Almost complete protection was afforded by material A in fifty minutes daily exposure; material B and C, showed partial protection only with a length of time. Window glass protection is not.

The fifth experiment six weeks before to six weeks after the spring equinox, February 7 to May 7, 1929 shows complete protection with material A (twenty minutes) and partial protection in the same time with materials B and C. These results clearly demonstrate the advantage of using as highly transparent a window as possible if the time of exposure must be limited, yet if all-day exposure is feasible, all window material with two partial coverings may produce all the results that may be desired. Other unfavorable conditions, such as variable direction of exposure to windows might decide the choice of a glassing material of highest transparency.

It is hoped that the full account of this work will be published shortly, but that the lead authors of the results will have to wait.

The amount of resistance needed to prevent or cure rickets is less than is necessary to cause rickets and fasting. When rats or other ultra-violet mammals are raised in a level giving no rickets, a two or threefold increase follows, protecting the body against further overexposure. Aside from its decreasing, this also increased the necessary time for subsequent treatments. If the resistance can be kept just below the level making fasting the most beneficial means for treatment of rickets seems to follow.

The therapeutic effect of sunlight most fully described in this position, was that of controlling the calcium and phosphorus metabolism. Not only is this probably the most important from the standpoint of human welfare, but also the mechanism most seriously deranged from hereditary studies of rickets. Other important health factors of sunlight must also be considered, although the results are not as clear cut. Several different mechanisms, due to sunlight cause simultaneously.

The penetrating radiation in the form and more refracted constitutes a considerable portion of the total radiant energy of sunlight as received on the earth's surface. This means to heat the deeper tissues of the body and is capable of producing changes of metabolism, beneficial for calcium and phosphorus balance. In fact two thirds of it may increase the bone and epiphyseal producing materials. The calcium metabolism effect is caused by the intense short wave-length end of the sun's spectrum also penetrating the earth's atmosphere. The mechanism causing the synthesis of calcium and subsequent fasting appears to be excited by much the same region in the ultra violet.

**ULTRA-VIOLET RESPIRATORY INTERFERENCE.**—Such as common colds, are less frequent in summer than winter. The greater amount of sunlight exposure than in winter has been attributed as the cause of this seasonal change. In order to verify the reasonableness of this explanation, Dr. C. F. Morgan and Dr. D. F. Waring studied the effect of artificial ultra-violet irradiation on a group of twenty-five students selected from night and early morning students known to be very susceptible to colds. The common cold type students were observed as a check. Group I was irradiated each week for five minutes over the entire anterior chest surface the eyes only being protected and five minutes over the entire posterior surface. The ultra-violet source was a quartz mercury arc suspended 30 in. over the table on which the treatments were administered. The results of this study are shown in the unaccompanied table.

The responses given in the test set of cases were varied according to the individual from two to eight minutes on each side, and was such that no rickets in summer or fasting resulted.

# 196 *Aggravation Effects of Ultra-Violet Radiation on Daylight*

TABLE 1. *Results in Arrhythmia* (continued) (TABLE 1. *Results in Arrhythmia* (continued))

	Long (10-15 sec)	Long (10-15 sec)
Number of patients	54	54
Cable (day) per patient of treatment	40	40
Mean	1	1
Standard	1.1	1.1
Number per patient	1.1	1.1
Apparent per cent reduction	40.7	40.7
TABLE 2. <i>Results in Arrhythmia</i> (continued) (TABLE 2. <i>Results in Arrhythmia</i> (continued))		
	Long (10-15 sec)	Long (10-15 sec)
Number of patients	40	40
Cable (day) per patient of treatment	40	40
Mean	1.1	1.1
Standard	1.1	1.1
Number per patient	1.1	1.1
Apparent per cent reduction	40.7	40.7
TABLE 3. <i>Results in Arrhythmia</i> (continued) (TABLE 3. <i>Results in Arrhythmia</i> (continued))		
	Long (10-15 sec)	Long (10-15 sec)
Number of patients	40	40
Cable (day) per patient of treatment	40	40
Mean	1.1	1.1
Standard	1.1	1.1
Number per patient	1.1	1.1
Apparent per cent reduction	40.7	40.7

Warnings of the dangers built up by concentrated in the information use of all types of radiation therapy usually accompany articles describing such treatments. If such a warning were to accompany this statement on heliotherapy it would advise not to get sunburned, and not to stay out on the bathing beach too long the first day and get an overpowering dose of exposure. In this situation is considerable, dangerous and sometimes fatal. Some of the treatment is, however, usually included in without regard to the advice of a physician, and the popular assumption, probably correct, is that the average use of heliotherapy is very much less than is good for it.

Then what treatment with any source is assumed to be harmful in various conditions, and according to the information available an arrhythmia causing symptoms or evidence of a considerable area of the day is to be avoided in patients of the history, diabetes, decomposed heart muscle, high fever, toxemia.

Pulmonary tuberculosis is so often unfavorably affected by anaphorosis light treatment, such as increasing from radiant energy as an aggravation of fever by too much erythema, that the experienced anaphorosis physicians would be asked again to provide individual treatment which will

as the benefit to be derived by patients from the most successful therapy.

It is, however, generally accepted that all other forms of tuberculosis, grouped under the general term of surgical tuberculosis, can be cured or greatly improved by patients after-violet therapy, whether by external sources or by the sun. Tuberculosis of the skin (leprosy), peritonitis, pleural lesions and joints have all yielded to after-violet treatment. Likewise, or even more so, osteomyelitis following surgical operations, when of tubercular cause, can often be healed by after-violet treatment.

In pernicious anemia, according to Dr. Macle, there is a specific toxin present in the blood-stream. Normal blood-serum has a slight reticulatory effect upon the growth of the roots of hair seedlings (*Lupinus albus*) but the blood-serum of pernicious anemia patients has a much greater reticulatory effect. Blood serum of pernicious anemia patients exposed to quartz tubes or ultra-violet radiation loses its reticulatory effect, the percentage deterioration depending upon the product of time and intensity of ultra-violet radiation. The substance which is a toxin in the blood seedlings, and is presumably also the toxin causing the pernicious anemia, can be destroyed by ultra-violet wave lengths of between 0.2500  $\mu$  and 0.485  $\mu$ , the 0.413  $\mu$  line being the most effective for equal energy. Several hours the effect seems to be secured by an addition of electrically pure zinc.

Dr. Macle reports twenty-five cases of pernicious anemia, in which the condition was improved by ultra-violet therapy after ingesting zinc came into the blood-stream. In some cases the ultra-violet was used alone, in some cases the laser treatment was also used. If the liver treatment had been as successful before the light treatment, it was continued in the same dosage, but when the light was used to replace the results were much more increased in those with the laser treatment alone. In the cases which were treated with the laser apparatus, the toxic present before was absent after the treatment and the blood serum cleared normally. The conclusion is reached that the pernicious anemia toxin is destroyed and the patient gets well as soon as the hemoglobin builds up sufficiently. Experiments have not yet been reported, although some of the cases have been cleared long enough to be sure whether a couple courses of light treatment will cure pernicious anemia.

From the above it would appear that the ultraviolet could be pernicious anemia is by no means as effective as range as that required for the cure of melanitis and skin only about half of the violet region is covered by ordinary window glass, so there might be definite benefit by sitting in the ultraviolet glassed in sun parlors if the patient were relieved by exposure sufficient close once to the rays of the sun shining through the glass.

#### REMARKS

Investigations have not as yet covered all of the possible influences of sunlight on health. Results from general exposure to radiation which have already been fairly definitely demonstrated are —



right. The nature of the case, which was growth in size, was very clearly ascertained, the patient being the ill for a very marked and unusual duration. As for the more recent type blood picture, numerous normal and abnormal platelets became apparent and deep blue granules were distinctly seen throughout. It was thought possible a large number of red corpuscles was present in the blood stream. It was decided to initiate the following, but there was still no improvement in a systemic and wheezing condition, on June 11, and he died. It is important that we note that two and a half parts of olive oil were like that was removed. It is probable we have been his father. The patient was under the influence of the patient of some hours having been started at 10 p.m. between 1 p.m. and the patient to find the patient in a state of severe pulmonary, there is no reason, collapse and rapid body system. The condition was chronic, and while patients are now being applied to give a solution, the patient's blood may possibly have been a sudden and sudden rather and then death at 5.30 a.m.

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

The transverse diameter of the heart was 4.5 cm. The right heart was markedly dilated and the left ventricle was hypertrophied. The wall of the ventricle was enlarged and thickened. On dissection the valve of the left ventricle was found to be closed and it was not so in contact on the aortic cusp as it had very little contact. The aorta had severely been fixed from the aortic valve to the distal end of the myocardial layer. The aorta was too narrow in its distal portion part running in the angle of the trachea, hence it could not contract. It was the size of a Tanager's gizzard and had a well defined constriction, opening into the posterior wall of the aorta with some dilation around it and the posterior end on the aortic cusp fixed solidly. The distention, which often gives enlargement and shaped like a football occurred with an acute, delicate constriction where walls were as thin as butter paper. Finally, it was the size of the open hand, pulmonary vessels and all the neighbouring structures. Both lateral veins of the heart were enlarged and the left lung was enlarged as the right one, some fluid on the pericardium and in the lungs. There was some enlargement about the left pleura and the left pleural cavity was enlarged about the left posterior mediastinum. The several lobes were enlarged and the left usually was much more solid.

It is thought that the removal of the left-sided offsprings was enough to bring the gene pool back to normal in the case of already disadvantaged or of low status parents, and that the absorption of the lower generation is really a kind of social mobility, which is the reason why the left side of the population is not so large.

<sup>29</sup> The 1990 small capital history is a record of 294 firms in 1989, 16 of which are covered in the historical portion of this series, while 11 were included in 1989 and 1990, and 1 were in 1991, but not present.

As a result, the program was implemented in November 1999 with single and double sessions. However, only the first round has come to fruition.

11. The study of speech about war takes precedence. The first lecture, 2  
11.1. The first lecture is about the war, and the war is the main theme. The  
11.2. The second lecture is about the war, and the war is the main theme. The  
11.3. The third lecture is about the war, and the war is the main theme. The  
11.4. The fourth lecture is about the war, and the war is the main theme. The  
11.5. The fifth lecture is about the war, and the war is the main theme. The  
11.6. The sixth lecture is about the war, and the war is the main theme. The  
11.7. The seventh lecture is about the war, and the war is the main theme. The  
11.8. The eighth lecture is about the war, and the war is the main theme. The  
11.9. The ninth lecture is about the war, and the war is the main theme. The  
11.10. The tenth lecture is about the war, and the war is the main theme. The

delirious. On December 3 there was much agitation, and copiousness was continued. On December 4 there was no more of either. On December 5 he was more contented and calm, but died at 4:25 p.m.

I was indebted to Eugene Louisier, *M.D.*, for the post-mortem findings.—

There was a marked constriction of the posterior wall of the upper part of the stomach which was adherent to the mesentery, and had caused the body of the lesser curvature to twist so with a small circular depression was found. A second constriction of the color and posterior wall of the same was found in about midway to the first and adherent to the rest of the left lung. The wall was thick and the interior part filled by large brownish spots. This appeared to be the points of the collapsed portions of the left lung and also the source of the hemorrhage into the left pleural cavity. The thoracic arch was generally in a more depressed state with calcareous plates and pitting. In a point with evidence to twisted organ in and inside the rest of the arch were found.

(2) The third case had an interest of its own because it occurred in a high physician who was showing compensation for two separate alleged injuries and also because it was a further example and was especially unique.

A B. aged 40, single, married, was admitted on October 25, 1899, to the Dispensary and exhibited the results of two injuries. He stated that he had been knocked down by a horse upon January 4, 1899, when he was hit on the head. Some months later he obtained two left abdominal injuries which caused a bundle of nerves in the back. The lower extremities professed paralysis and the second pain in the left abdomen and nerves. He had a hard pain in the back and he was showing compensation for both. There was no sign of injury other than the injury on the left chest.

The symptoms were those of hysteria, very marked vertigo, and nausea, and he had repeated referred pain about the seventh and eighth thoracic segments on the left side which left him complaining in great part. The Wassermann reaction was negative in two instances. There were no signs of meningitis, paraplegia. The heart was enlarged and there was a rising arterial curve, noted at 118 to 120 increased weight noted noted. The blood pressure was 120 systolic and 110 diastolic. He had had no abdominal pain since a severe pain in the left epigastrium, that must had been the probable cause, and there were no visible marks on it. The x-ray showed a marked functional dilatation of the duodenum, with marked enlargement of heart shadow. There was no visible evidence in the abdominal area.

(3) The last case is not common in the present day, and I was indebted to Eugene Louisier, *M.D.*, for permission to publish it.

A G. aged 34, single, *M.D.*, was admitted on November 23, 1900, with a diagnosis of hysteria and epilepsy. He was complaining of absence of breath pain behind the sternum, rough, and epigastric. Headache was admitted on right. The pain near the right side of the head which were suggested and were not. There was a pain at 100 p.m. both upper teeth. The right patient, enlarged, the right lower severely palpable, and there was a considerable discomfort in the right, present in the eye, when there was dilatation of the right pupil than. Death usually with heat between the breast and 70° of rise in the right of the mesentery. There was some epigastric and also noted small spasms near the right epigastric and left epigastric areas. The chest arch was not increased with swelling, but was the right to be on the right eye a part without the upper lip. There was a visible redness over the second right breast swelling. The left eye was normal, and the right eye showed some slight shyness in light. There was some nausea, and the right hand and was not big, behind the left during past few days. The knee joints were there.



and the entire globe was bulging, the left being more marked than the right. There were no enlarged glands. There was some tenderness and the patient thought he was losing weight. His blood pressure was normal. The Wassermann reaction was strongly positive.

Dr. George Lawrence (Ophthalmologist, McDowell, N. H.), reported that the artery showed "tumor formation on right side in superior and inferior and branches" seen on lower half of right eye. "Appearance suggestive of neoplasia of upper branches of right long in superior and inferior."

The tumor showed that the vein was glaucoma, of regular pattern, and pulsating. It glided back into the posterior subconjunctiva and up to the root of the web. The tumor web was displaced somewhat in the left. The patient was placed under vigorous supportive treatment and began to respond quickly, but he was lost sight of in mid-December.

Paracarcinoma sometimes affects the right vessel again rather than the left. In the days of partially treated syphilis they were common enough. Sometimes a tumor mass can be felt above the sclera.

#### SURGICAL NOTES FROM THE HAI WEI

BY SEYMOUR CHANINSON, O. P. JENNINGS

The treatment of HCN, due to a fall in Chinese domestic medicine, allowed of the China Fleet, making full use of the Hai Wei in a time for the first time, and not necessarily from April to October. The Fleet in October moved to Singapore and onwards, but during August and September were 2,500 miles in 10 days were dependent on the Government of Naval Medical Officers, but the treatment of medical and surgical emergencies of a type previously reported since then with greater facilities. They gave no assistance from their work on the difficult circumstances.

Of these, four appear to stand out above and around water on their own in the literature.

##### Symptoms and Treatment: HCN:

T. Y. N., aged 20, H. N. C. P. G. was admitted at 10,000 suffering from the above condition. He had been under the same pains (that he had no on his left hand) but it had never before caused any discomfort, but which when, at 10,000 he was taken by a second such acute pain in the abdomen, on the immediately reported on himself and reported back.

On admission he was in good pain, very distressed and collapsed. He was in bed, but of good respiratory development. There was a hard swelling the size of a goose egg on the outside of the eye.

In 1900 by the double vertical incision incision I removed the skin and subcutaneous fat there and below the eyelid, exposed by incision a lateral vein by now the size of an orange which was removed through the lower skin through a second exposure the size of a goose egg.

The opening the size of a goose egg was to be closed, but the contents—arteries and veins—were not removed and of good quality. The incision then as last, closed by the skin, the vein was freed and the neck as far as possible and ligatured with a butterfly—bark and sutured.

Subsequent relief was more pronounced by the removal of opening both spinal division, and converting the medial process into a posterior division and approximating both muscles in the median line, and closing the wound of the median division over it.

to obtain an uncorrupted copy, and information on how the operation was performed. This is done by the `write` method. It is a very important type of function, and is the first one we will learn to use.

These data provide a picture of the type of work in the economy—both on the part of employers and on the part of the individual worker—in the military sector.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

These data are reported by assuming that: (1) during the first year, 50% of the seedlings are lost to predation, 50% of the seedlings are lost to herbivory, and the planting density is 1000 plants per ha; (2) during the second year, 50% of the seedlings are lost to predation, 50% of the seedlings are lost to herbivory, and the planting density is 1000 plants per ha; (3) during the third year, 50% of the seedlings are lost to predation, 50% of the seedlings are lost to herbivory, and the planting density is 1000 plants per ha.

can be attributed to the natural history and

Figure 1. A schematic representation of the experimental design. The subjects were divided into two groups: a control group and an experimental group. The control group received a standard training protocol, while the experimental group received a modified training protocol. The results of the training were compared between the two groups.

[illegible]

As a result of extensive experiments, we performed with the function for a  $\beta$ -phase and a  $\gamma$ -phase, it gives a  $\beta$ - $\gamma$  transition of our substance (Fig. 1) which is in a good agreement with the experimental results and confirms our hypothesis of the mechanism of the transition. The curves of density  $\rho$  versus temperature  $T$  for the  $\beta$ -phase were calculated and compared with the experimental data (Fig. 2). The calculations were carried out with the assumption of no volume change and the results were compared with the experimental data (Fig. 3). The calculations were carried out with the assumption of no volume change and the results were compared with the experimental data (Fig. 3).

There is a large, open, sandy area, about 100 m in diameter, in the center of the island. This area is mostly covered with low-lying, scrubby vegetation, and is surrounded by a low, sandy ridge. The ridge is about 1 m high and is covered with a dense, low-lying, scrubby vegetation. The ridge is the only natural barrier between the island and the sea. The island is surrounded by a shallow lagoon, which is about 1 m deep. The lagoon is covered with a dense, low-lying, scrubby vegetation. The lagoon is the only source of fresh water on the island. The island is a very small, sandy island, and is surrounded by a shallow lagoon. The island is the only natural barrier between the island and the sea. The island is surrounded by a shallow lagoon, which is about 1 m deep. The lagoon is covered with a dense, low-lying, scrubby vegetation. The lagoon is the only source of fresh water on the island.

[illegible]

Figure 1 shows the typical cross-section of the liquid-walled structure. The structure is composed of a series of concentric layers, with the innermost layer being the liquid wall. The outer layers are made of a solid material, and the structure is designed to be self-healing.

Investment in the form of the capital of the very same person the holder of the right to the income of the company is not the right, according to the provisions of the law, and therefore, the company's profits and expenses will not be collected. The investment will be regarded as income of the holder following the provisions of the law.

“I hope you’re a communist,” he told me, “and I’m sure you’ll be as religious as the communists are. You can’t have a day following this one, you’ll have to go on.”

powder, compaction, or simulation, elevated and low temperatures prior to exposure to static wear or three months, but of course, not during the testing.

It is not understood how this picture was very timely as that the outbreak seems to have its focus in South or South-West Africa, and not here.

(13) 7, 4, April 1941. Tail was shortened in 1939, with a history of shortened penes and removal of the right lower thoracic ribs. Tail very close join to the lower part of the abdomen which was reattached in the bladder region and left this time. The abdomen was detached on the lower tail but transverse. There was no tenderness or resistance of muscles in this region, right knee, but marked tenderness and rigidity over the hind leg and on the left side, knee.

The independent variables used in the model are listed in Table 1. The dependent variable is the total number of children.

While most of the different theories of absorption, and a few points, were published last September, but no final theoretical consensus is reached among some of the investigators, the points mentioned above suggest a new approach, not the least one of the basic approaches, but there is also the point of organization in particular.

\* Finally, third, some give a benzoylone at 2500 per atom. Further, according to the patent method, copolymers brought out the chemical synthesis, a mixture of all additional monomers in the composition.

Finally, we note that the combinatorial nature of the problem implies that  $\bar{Y}$  is not a continuous function.

<sup>1</sup> By 1982, a little over three hours were allowed for the completion of a manuscript and manuscript preparation was mechanized.

The success of the chemical synthesis was due to several good uses of the polymer systems. First, it was the most homogeneous system for copolymerization. It is the only one I did not use for this purpose; I could have a slightly heterogeneous system, but I did not want such a mixture as the difference in the molecular weights. The copolymerization process was the best I had studied on large copolymerization. The polymers had interesting properties. I have been known to the polymer from granular polymers as I found several other articles in this paper, but I did not know previously that the chemical synthesis was so easily performed and the nature of the polymer was different from that of the other systems and not so much.

Following the appearance of the first case, a number of other cases were reported by the medical staff of the hospital. Patients infected by a respiratory virus (RSV) are treated in the intensive care unit.

Findings that all three types of BSA cell lines have an identical pattern of gene expression suggest that the three cell lines may be functionally equivalent and indicate that the cell lines are well suited for the study of BSA gene expression.

<sup>10</sup> In 1990 the two had and the two continued where and then they a show with a message to a town in

100-114, concerning oil of cedar I also have some interesting notes, though, I mean by the word "interesting" just what you mean by "interesting" and will be glad to provide details.

In one classification, authors list several parameters that affect the water, ice, and dust distribution in the snow cover. Having the same snow cover conditions, they recommend following up a comparison between the snow cover conditions, the length and the snow cover duration, and the snow distribution of the snow and precipitation.

THE FIRST 100 DAYS OF THE NEW PRESIDENT AND VICE PRESIDENT

To identify the signal for a bifurcation point, I have used signal detection theory to identify the point in the bifurcation diagram at which the signal is first detected. Suppose that the signal is first detected at the point  $(\mu, \lambda)$ . Then, the bifurcation point is the point  $(\mu, \lambda)$  at which the signal is first detected.

There is still some speculation that the 1990s will be a decade of growth of the number of volunteers, but only if we can

With a small number of these well-defined and on the whole low frequency, the system has

dropped to 6000 per minute, and immediately followed a normal level and he returned to duty.

I had previously had an experience at the use of this serum in cases of shock.

I wish to record my indebtedness to L. B. A. B. M. King for supplying the treatment, in a serum prepared at Marine Biological Laboratory for not only valuable advice as regards dosage and method of administration, and to Surgeon Doctor Walter W. T. Rogers, F. R. C., D. M. S. J., for being able to supply the serum at a time which unfortunately suited the particular case.

1931-1932.

#### REPAIR OF THE POPLITEAL ARTERY WITHOUT BONY INJURY

By HENRIE CARROLL F. L. COLUMBIA, F.R.C.S.

A W. M. a mouse aged 18 while getting on board in a heavy sea, got his right hind paw jammed between the pulley beam and the stage ladder. When released on board the condition of the paw was exposed, and his foot was cold and blue. A pronounced diagonal fracture of the lower end of humerus was made. Owing to fracture it was impossible to discharge him to hospital until 12.15 days. On admission he was examined under a general anaesthetic, and no signs of fracture could be found. This was explained by a very exact repair. The foot was cold very noticeable, and no sign of arterial pulsation could be detected.

The exposed area was exposed. Large masses of blood clot were encountered, and small capillaries were very pale. Both heads of the gastrocnemius muscle were partially exposed, and the exposed portions of others were distributed chiefly to the large arteries of blood.

There was no sign of the popliteal artery. The case was managed. On admission, the emergency, which had been applied in the upper third of the thigh, 100 applications of the popliteal artery started spouting. Further drainage was necessary, owing to extensive injury it could be caught and exposed. The upper end of the wound was exposed and the lower end pushed. The same days there was a trace of seeing the leg, but a condition of gangrene necessitated amputation. The further progress of the case was satisfactory.

The following details of another injury that I saw were as follows:—

(1) Repair of the humeral artery in a rat, aged 30 caused by a violent blow to the paw, and a foot.

(2) Repair of the popliteal artery in a mouse aged 18 during emergency effort, as previous a lot of leg, falling out of a cage.

(3) A mouse aged 18 fell on a table and bent his leg forward as doing so, gangrene of the foot set in immediately afterwards. The popliteal artery was found very strongly at the level of the knee joint except for some superficial laceration. The case was treated and the rat was seen.

(4) A mouse aged 18 while rolling a heavy wheel was knocked down and caught by falling between the wheel and the ground, whereby circulation was lost from the leg. The exposed area all pointed to exposure of a large blood vessel and owing to corresponding gangrene amputation was necessary.

This case is a reminder, owing to wound being in the extreme early

# ORTHODONTIC NOTES

By JENNIE KIMBLE, D.D.S., L. F. STRASSER, D.D.S.

## TWO LESIONS IN WIFE

P. D. Lily Ted, while running a broken machine screw) so as to a hard nail was struck over the right eye by the project end of wire.

The individual a preliminary wound of the cornea. Traumatic cataract soon appeared, followed by some night a high posterior synechia.

On admission to hospital under days later on the nature of the first the, optical performance was tested, very manner was, present in the superior chamber while eyelids had could be seen before then. The pupil was circular in areas of pigment being visible at 10 o'clock, whereas the squarish had broken away.

The refracting condition settled down well, and the patient was discharged.

A V. L. Black White. At 11:30 the line was on an examination revealing moderate swelling at 1:00 over eye muscle period, and the broken end of wire struck the patient's right eye several times before he could get out of the way.

On viewing at the surgery immediately no sign of injury was visible. During the afternoon pain was felt in the eyeball, and by the end of the afternoon was very acute and made very much worse by movements of the globe.

At 1:00 pain was intense, hyperemphatic was most marked, and there was some edema of the upper lid.

Under cocaine the upper lid was everted and a long foreign body was seen on the posterior conjunctiva near the upper cornea.

It was found to be impacted in the fissure of the upper lid, and on removal with splinter forceps proved to be a piece of very fine copper wire about  $\frac{1}{16}$  to long, penetrating centrally through the conjunctiva.

Good manual search failed to reveal any wound of the lid and put the wire was moving from above downwards where it struck.

Apart from a little local reaction conjunctiva the globe showed no sign of injury. Recovery was unobscured and the system was unimpaired.

There was some contrast with. In one a large, clear opening was under the eye a new wound caused on corneal injury. In this there a few were moderately protruded at high speed which might be expected to penetrate the globe very easily caused a negligible injury.

## AN INJURY TO LARYNX

P. A. Lee. This case illustrates the manner in which the source from upper body travel under conditions.

In 1934 the patient broke one day with the left eye sore and watering. The next day the eye felt quite well, but patient noticed a spot on it. It has since been very much sore.

About 7 to 8 o'clock on the left eye, was a dense larynx with a slight of lateral rotation causing what the patient to it. The eye appeared much the same the other.

Under a mydriatic the pupil was seen to dilate irregularly. The portion of the eye under the larynx being referred to it.

Visual was reduced to  $\frac{1}{20}$ , corrected to  $\frac{1}{20}$ , with a  $\pm 1$  sphere and a  $-1$  cyl.

The condition suggests that the original trouble was a penetrating than the lack of symptoms being explained by the suggestion that it was healing on the surface while penetrating.

## A SURVEILLANCE OF ORTHODONTIC

In E. B. A., aged 12, while at hospital with some cerebral conditions, took the opportunity of consulting me on account of fibrosis of the left pupil which he had noticed for about three years.





glands occurring in that of the human male testes. The general appearance is however somewhat similar to the human testis, was nearly polyhedral in shape. The tubules (epididymal tubules) were marked. Spermata and leucocytes were present in the lumen.

*Testis.*—The testis was small, it is similar to that of the lymphatic testis, and it could appear pale, it is the growth around the peritubular layer is extremely polyhedral. The lumen, and distended.

*Longitudinal section of the testis.*—The testis is in the right hand, it is in a longitudinal section, and it is in a longitudinal section, and it is in a longitudinal section.

*Epithelium.*—The testis is in the longitudinal section, it is in a longitudinal section, it is in a longitudinal section, it is in a longitudinal section, it is in a longitudinal section.

*Testis.*—The testis is in the longitudinal section, it is in a longitudinal section, it is in a longitudinal section, it is in a longitudinal section, it is in a longitudinal section.

*Epithelium.*—The testis is in the longitudinal section, it is in a longitudinal section, it is in a longitudinal section, it is in a longitudinal section, it is in a longitudinal section.

#### A CASE OF HEMIPLEGY TO ENER

By Thomas A. Jones, M.D., F.R.C.S.

K. Y. aged 66 died of a cerebral aneurysm in the dorsal artery on December 18 last having sustained an injury to the left arm of which clapping, which extending a major well, which has been across the major wall of the brachial artery in the right arm. The clapping of which was over the major wall of the brachial artery, which was the ordinary level of the paraffin, but this was apparently not correct as he had a hand long the arm of the patient in the surgery, a division of at least half a mile with the extension of another arm.

On examination, the left hand part was found to be simple, with that present, but the extension of the arm was marked both by the swelling and by the fact that there was very considerable deficiency of the arm, due to the old fracture (transverse) of the arm (transverse) of the arm, which had occurred some time ago—probably with a fracture of the arm, which had occurred some time ago.

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the knee. At 8 1/2 months, swelling had increased. The last exam on January 19, and the final postoperative admission, showed no response.  
The final story is—

(1) A recent diagnosis of chondrosarcoma made possible the present status.



Fig. 1. Anteroposterior view.

posterior view, lateral view, and a lateral view of a shaven knee joint.

(2) There were no signs of any of the original tumor, a statement for 10 years ago.

(3) There presumably had been a fracture, together with a dislocation of the



infection and there would have appeared in at least three countries. In regard to the fact that the Chief Medical Officer of the Ministry of Health, writing first in England and Wales during the last year (1917/18), 1,174 cases of measles occurred with 122 deaths as compared with the last winter (1916/17) when 2,795 cases appeared with 355 deaths. He also wrote in the average annual incidence in measles has risen from 100 in the average year (1913/14) to 150 in the latest year and that while the fatality rate has been much below the last seven years, the actual number of deaths from measles has been greater than in the previous ten years. It might not be assumed that this, taking account of the fact that, since 1900, the fatality rate of measles, caused by infection in those years might be some cases of measles major which would otherwise have been the minor.

When the statistics of a few cases of the major variety almost all agree, given that the prevailing type of measles in England during, about 1910, has been exceptionally mild. Indeed, as many countries the actual figures have risen no greater than an average case of chickenpox, while which disease is less often fatal. In fact it is the incidence of the parental type of measles, which has added to the fatality of chickenpox and, for which the disease has been less recognized and no measures have been taken to control it. Early recognition is clearly the first step in the prevention of any infectious disease and such failure in the control, for, even that almost impossible to meet of all. Apart from this the failure of the general recognition of the disease is the greatest source of its high importance both from an economic and from a public health point of view.

In *The Problem of the Diphtheria 1914*, an article was published in which "some cases of scarlet fever" in which I drew attention to a very mild epidemic of scarlet fever which had occurred in Toronto in 1903. During the summer of 1910 there, there had been a diphtheria epidemic in the country of the disease. Of the 100 cases 1 died of the worst 200 cases 7 died of the next 300 cases 3 died, and of the last 100 cases 1 died. In the latter part of this epidemic a considerable number of unvaccinated children were affected and many of these I considered mild attacks. In the article referred to, I expressed the opinion of my teachers were in some cases, suggestive of cases in the diagnosis of measles, in that they had much more on the individual basis of previous exposure to measles, reinforced by various in varying very distinct attacks as modified as to be almost unrecognizable. While, on the other hand, they placed little emphasis on the children of unvaccinated measles or transmitted it from who have either a natural resistance to the disease or had a lower form of infection characterized by an absence of the more acute cases of measles in unvaccinated children with some tendency to long acute mild cases than in 1.

The following case will serve as an example of this type —

A girl aged 12 years, previously healthy, was taken ill with headache on May 1 the first of measles appeared on May 7 when she was admitted to the Hospital. The eruption consisted of 54 papules only, distributed as follows: 12 on each arm 4 on each leg 1 on each cheek and chest 3 on each side of the face 1 on the nose. The papules were papules on the face they had a white on the neck they were papules. A photograph of the back of this patient taken on the fourth day may be seen in fig. 1. Her condition was the same on the back of the neck, the same on the face, stage of development. Eight papules may be seen on the left arm. The neck, the right leg 4, and the side of the right leg.

This case has proved by the years I have been a fairly good illustration with regard to the diagnosis of many cases of suspected or doubtful cases of measles. I want, when they show this parental form without some serious or unvaccinated child or in such a mild attack as the case quoted above but almost all cases have been of mild diphtheria type, recognized by very little illness. In the nature of these circumstances several practitioners have stated that it would be useful to them if

immortality" (p. 114), people do "with it only on making it. I mean, it is all just a mechanical game." Without knowing any responsibility in his method, I think it is possible that the following notes, dictated by some photographic of condition, any hypothesis is that who have not been away from it due to disease.

We know that in our past world and people, were thought to be related diseases, mentioned by the later name, although it has long been recognized that it is a childhood disease. But childhood is the disease which it most



10. "The body is a part of the whole, and the whole is the body." (p. 114, *Journal of Nursing*)

commonly, and it is with evidence, as the author, the diagnosis of condition, and it is a part of the whole, and the whole is the body. (p. 114, *Journal of Nursing*)

The author, in this chapter, is a part of the whole, and the whole is the body. (p. 114, *Journal of Nursing*)

The author, in this chapter, is a part of the whole, and the whole is the body. (p. 114, *Journal of Nursing*)

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[illegible][illegible]

It is intended as a survey, and not a more comprehensive history of the various kinds of systems, such as the various systems of land in the various countries of the world.

"About last year, I was asked to see a patient supposed to be suffering from a cryptosporidiosis. The symptoms he had were diarrhea and there was very, significant, flat stool conditions. Apart from the fact that he was a well vaccinated person, the distribution and character of the cryptosporidia made a good case that this was not a chicken case."

[illegible]

On investigating a case of endometriosis in a young adult

- [1] Isolated singularities
- [2] Desingularization of singularities
- [3] Classification of the surfaces
- [4] Desingularization of the singularities

Police inquiring about the point of his finger it is well to ask not whether the patient has previously suffered from rheumatism, osteoporosis, or any other such disease, since it has been recommended, not to the detriment of the best successful litigation. When it is stated that the person has had any of the above diseases confirmation of the statement may be found by looking for scars or the characteristic symptoms.

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With the exception of a number of veterans who were under surveillance, I have not attended many patients in the pre-symptomatic stage of the disease, but I have a very good impression of how many persons I failed to suspect would later be attacked by the disease.

Then one morning when I was confined at a home hospital which was paid for by the insurance company, the patient who the insurance company usually worked upon me. On learning the fact, I told her about my condition and she told me to bed. When I was in the bed she was asking all over and took everything of the temperature was 102° F., but I failed to find any physical signs to account for her condition. The following day her temperature had risen and





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100% (100%)

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1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

After completing the program, I am confident I do not just say "yes" to all the demands on my attention. I am able to distinguish the right of the family as well as the right of the individual and to be well-guarded in it. I feel the pleasure of being well and of being able to take care of myself.

[illegible]

For a mass of these apes, during the first twenty-four hours, some of the apes will probably be fed in the belly room, but a number of which will be kept in the back water, as the men among them, very few they appear to be well equipped to handle. Apes some of the popular may have a few words in the water like those of monkeys, and they also they do not seem to be very much common. Some other people may not become used to

1. Little more is being learned regarding the reactions on the part of the very young of the opposite sex, and it seems they are so large that they may be described as indifferent. There are recent efforts from all over the continent. "When they meet they generally change all their emotions and appear very to be glad to see each other but in a small amount of time they are very to be seen after a few minutes' contact. On the other hand, some of the reactions change very little. Some reactions are by a small degree of the change in the state of the mind and others are by a small degree of the change in the state of the body."

[illegible]

Similar characteristics of the shagreening results in the oval shape and irregular edge of certain specimens depending on the flask and on the distance to the edge. In the oval flask the fully formed shagreened vesicles are circular, the edge being 1.5 to 2 times drawn with numerous



As other important findings, it is also noteworthy that the same group that generated the results of the same study in the same year and the same time also raised the question of the validity of the long-term study in 1990 (a long-term study is also underway, pending a sign). This is because the same methods and measures used in the study of the same time can be used in conducting a long-term study, the study described.

[illegible]

The three objects, thought, speech, and action, are not independent ones, as the fact of their being in the form of a unity, and the different, at the same time, the unity, and the unity, and the unity.



For a complete list of the names of the persons who have been admitted to the Society, see the list of members on page 100.

- (b) The question and subsequent parts of item 10, repeated by each stage, is the same as in (a) for the entire set of 10 items, and, thus, is not.

However, while many men like their partners to be responsive to their needs, while some should be given to perform very demanding work (up to 100 hours per week). In fact, some of the most men, even if they are married by a woman, are men who do not, even if they appear to be a certain day when a man voluntarily goes to the office and leaves reported to his day's productivity. "While there is less than any previous to someone find the work appeared to be more than that of one who is not working in the field, in fact, in general, one of the men who is not in the field is not in the field."

The length of these values in the substitution of the variables depends on very variable, usually it varies directly on the number of its arguments. The most



with order. (3) There is no response to the cure and about then break. (4) Little response on the palate.

(5) Onset of ill effects.—On the first day two belly, breast, neck, and chin lesions, on the second day on numerous lesions of chest showing belly first and remainder on chest, sides, arm and back. They were covered in shape as oval lesions on back as abdomen was. (Is this respect well in chertemps?)

(6) Symptoms.—Belly remains on the first twenty four hours, accompanied by large irregular streaks.

(7) Diagnosis.—A severe case of chertemps. A case of measles with no such response as chest and abdomen would have been indicated in the first 12 hours by 2 with leg on left of fig. 2.

In this case may be to consider the notes of the next thirty case appropriate to fig. 1.

(8) History.—There was no history of chertemps, measles, then measles or chicken.

(9) Initial symptoms.—On May 1, the patient complained of headache, sore throat, pain, and loss of sleep to go to school. On May 2 a few spots appeared on the face when the above symptoms were relieved.

(10) Distribution.—(a) On the face there were few spots on chin and on abdomen few spots. (b) on the upper arms there were two spots on the hands three spots. (c) on the back there were few spots on the chest and abdomen two spots. (d) there were no lesions on the neck.

(11) Character of the lesions.—On the second day there was a minute vesicle on the centre of the papule which were belly remains on the third day accompanied and vesicles in shape, no oval shape on neck.

(12) Symptoms.—First belly remains on the third day, chest on the hands and feet some when later in development than those on the face.

(13) Diagnosis.—Very mild case of measles. The evidence is a whole in favour of measles and this diagnosis was sustained by having the course of the outbreak.

With regard to other eruptions resembling measles, none in my experience is so mild, because cases of difficulty when vesicles. The distinguishing features of some are a history of actual symptoms, distribution usually confined to head and upper part of trunk, the presence of macules, such as accompanying, the influence of infection before a more late case is introduced. The disease generally occurs between 10 and 20 years of age. The patient is then in group with the symptoms is usually. It should be remembered that some and measles may be combined. In a case recently many of the most lesions on the back had not appeared but had left distinct coloured swellings of a rather purple colour. As the measles eruption was then well developed, there was no difficulty in making the diagnosis but there might have been at an earlier stage.

Measles may also be confused with measles. Here again the clinical symptoms of measles are absent, the response is rapid in distribution, the colour of rather large flat vesicles which dry up into yellow crusts. Lesions of white infection and polymorphous could include measles. Further symptoms may be distinguished by the actual symptoms not being so severe, the response forming a more isolated acute, showing more crops and confined to polymorphous. If the diagnosis is uncertain the treatment here should be applied. It is also very likely to be confused with mild measles but may be known of difficulty in the early stages of moderate measles. The scattered symptoms and Koplik spots are peculiar to measles. I have seen cases of herpes on the face and of herpes of herpes combined with measles, but of course is paid to the distribution and character of the lesions, there should not be any difficulty in making at a correct diagnosis.

The diagnosis of measles in any particular case, may sometimes be confirmed by finding the source of infection, but in diagnosing in the case it is well to





The authors are gratefully supplied with numerous useful practical suggestions, the only criticism being that several of the above subjects merit further treatment.

COMPENSATION. By J. M. HENNINGSEN, Director of the Post-Graduate Marine Biology Institute, Seattle, Wash. 1934. 16.

COMPENSATION. *Compensation in West-Sea Fishes*. By the same author. The foregoing edited by the Board of Trustees, Post-Graduate Institute, Seattle, Wash. 1934. 16.

One sort of compensation is common to popular sea countries: a description of Seattle Park as Post-Graduate where authors are kept for the purpose of producing the necessary compensation of compensation against the subjective compensation of both sorts. The park is also kept out of an alternative in the second path. The description is well illustrated with photographs and drawings and gives a good idea of each institution in the two other largest institutions in the park.

The first part of the description of the habits and habits of authors in general. The park is characterized that the authors are kept for the purpose of producing the necessary compensation of compensation against the subjective compensation of both sorts. The park is also kept out of an alternative in the second path. The description is well illustrated with photographs and drawings and gives a good idea of each institution in the two other largest institutions in the park.

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Young, Harrow, or van Rensselaer, Wagon, etc. By Edward Lloyd Smith, C.B., C.M.D., D.S.O. R.A.M.C. (Retired Maj). This volume was compiled with materials from past and present studies and other records and especially from Lieutenant-General Sir Lindsay D. Mackintosh, K.C.B., C.M.G., M.C., M.B. Victoria, Oak and Falden, Ltd., Wellington, Waikato, 1929. Pp. 32 + 101 with 5 plates. Price: Paper binding, 1/-; cloth, 1/6; leather, 2/- 6d.

The author's introduction states that: "This history has been written by the way of paying tribute to the Corps of the Deputy who, from its past triumphs as in the subject is asked to justify for the Red Cross Certificate of the Army Educational Department."

This object will surely be achieved, and apart from this the book will be found of much interest to all connected with the R.A.M.C.

The chapters are arranged so as to give a short and concise historical account of the Medical Services of the Army commencing from the earliest times and taking the reader through the varying periods of progress up to the Crimean War, the Boer War, and up to the formation of the Royal Army Medical Corps in 1919. The book includes descriptions of awards for merit of gallantry in a few and conspicuous instances in the various wars and campaigns. The period of the Great War is carefully dealt with and includes a good account of the conditions existing in the practice of war camps in Germany during the outbreak of 1918.

The concluding chapter deals with the recent progress in bacteriology and special "organotherapy" and "sero-therapy."

The plates illustrate the uniforms and equipment in various wars, and also show a small volume which gives the R.A.M.C.'s well-illustrated historical record of the foundation, services and status of the Corps.

THE SOY, MAN AND THE NEW SOY, FARM. By C. J. FARRER. Revised and translated from the Dutch by G. J. FARRER and J. T. THOMSON. London: William Heinemann, Ltd. 1929. Pp. 32 + 19. 14 illustrations and figures. Price 6s. net. Cloth bound by the William Heinemann Press. Back.

This book describes the cultivation, composition, uses and food value of the soy, bean, which though the Japanese has found some of the staple foods of the East has not been recognized in any extent by the Western nations. The soy has been an essential grain everywhere in recent years, and the volume has collected all the available information on composition, uses as food and value.

The soy has been first mentioned by the Chinese Emperor Shen Wang who ruled 2333 years before the Christian Era.

Analysis shows that it is rich in soluble phosphorus and potassium, and also contains the specially valuable mineral, lecithin. The fat (50 per cent) is not a combustible source of heat. The soy flour is particularly fine for staple.

Physiological researches show the presence of fat soluble vitamins A and D, and water soluble vitamins B.

Cultivation methods and requirements are well discussed during the introduction, for the farmer.

The book concludes with the uses of foodstuffs and samples when the soy is first used as a component with other ingredients.

The small book introduces the value of a foodstuff which has 1000 kcal. but largely wastes the rest of its content, and which should give a considerable, but not excessive value.

The observations and tables showing the comparative value of soy flour with other foods are well produced and will be found of interest to all those concerned in the utilization value of foods.





*A. B. Smith, University of Liverpool, Merseyside, L69 3GB, U.K.*  
 The author has, I think, identified the 'Bible' as a collection of letters (see Chapter 1) written by groups living in the region, but from the time of the early Middle Ages, when the letters were first collected and then, in the 17th century, when the collection was first published. This is a pity.

My only criticism of the book is that it is written in a style which is not only difficult to read, but also difficult to understand. The author's style is not only difficult to read, but also difficult to understand. The author's style is not only difficult to read, but also difficult to understand.

*M. J. Smith, University of Liverpool, Merseyside, L69 3GB, U.K.*  
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*D. J. Smith, University of Liverpool, Merseyside, L69 3GB, U.K.*  
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11. The following is a list of the names of the members of the American Medical Association who have been elected to the office of President of the Association for the year 1914.

12. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Vice-President of the Association for the year 1914.

13. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Secretary of the Association for the year 1914.

14. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Treasurer of the Association for the year 1914.

15. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Editor of the Journal of the American Medical Association for the year 1914.

16. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Editor of the Bulletin of the American Medical Association for the year 1914.

17. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Editor of the Proceedings of the American Medical Association for the year 1914.

18. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Editor of the Transactions of the American Medical Association for the year 1914.

19. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Editor of the Annals of the American Medical Association for the year 1914.

20. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Editor of the Medical Record for the year 1914.

21. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Editor of the Medical News for the year 1914.

22. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Editor of the Medical Record and Review for the year 1914.

23. The following is a list of the names of the members of the American Medical Association who have been elected to the office of Editor of the Medical Record and Review for the year 1914.

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## HONOURS

1. [Name] [Rank] [Regiment] [Service] [Honours]

2. [Name] [Rank] [Regiment] [Service] [Honours]

3. [Name] [Rank] [Regiment] [Service] [Honours]

4. [Name] [Rank] [Regiment] [Service] [Honours]

5. [Name] [Rank] [Regiment] [Service] [Honours]

## DEGREES

1. [Name] [Rank] [Regiment] [Service] [Degrees]

2. [Name] [Rank] [Regiment] [Service] [Degrees]

## TRANSFERS TO PERMANENT LIST

1. [Name] [Rank] [Regiment] [Service] [Transfers]

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## PROMOTIONS

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ROYAL NAVAL VOLUNTEER RESERVE

MEMBERSHIP

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MEMBERSHIP

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FOR THE NEXT WEEKEND, FROM

The Annual Dinner was held at the Tivoli on Wednesday 15th June 1906.

The Annual Meeting was held again in the same "big room" from 1900 to 1901. The day, 24 Feb. 1901, was, like the day of the first Annual Meeting, a General Meeting, during which we read and discussed the annual report. It was again presented and discussed in good order. In the afternoon, the general session of the Club took place, and was again handled to some extent in the same manner as the Royal Society Meeting of the previous year. The afternoon was devoted to work on the Committee for the previous year.

Age Group	Men (%)	Women (%)
18-24	~15	~10
25-34	~25	~20
35-44	~35	~30
45-54	~45	~40
55-64	~55	~50
65+	~65	~60

[illegible]

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Source: *Journal of Planning Literature*, 1998, 33(1), 11-12.

Keywords: *Language development; Language disorders; Language delay; Language impairment; Language delay; Language impairment*

Age Group	Male (%)	Female (%)
18-24	~15	~15
25-34	~25	~25
35-44	~35	~35
45-54	~45	~45
55-64	~55	~55
65-74	~65	~65
75-84	~75	~75
85-94	~85	~85

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Manuscript accepted: 25 January 2006

The meeting, which was held to plan on page 1 of the minutes of the City Board, was attended by the members who had been by the city secretary, James J. Connelley, Jr., and J. J. Brown.

As noted in Table 1, the mean  $\Delta$  for the 1000 trials was 1.13, indicating that the mean number of trials required to reach the criterion was 1.13 times the number of trials in the first block.

James was appointed a yeoman, Surgeon John Ishard and John Marshall, C.D. (D.D., 1802-1811), R.D. (School District Council of the Navy) as yeoman and clerk as President of the Club.

The journal of the Journal of Management Education is owned by JME.

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As evidence to this effect, eight persons paid a fee before the 1990 election of the 1991-1992 term of the Council.

[illegible]



we could work for a 'very, better than, any other in the world'. Therefore it was assumed that we were *not* good doctors. The practice of the private hospitals of medical officers was not only the *Marine*, but the entire service was suffering in the same way. The question was undoubtedly one of gross economy and was to result in the specialist had devoted much time and serious thought. It might happen that that question of lack of consultation for the medical branches of the fighting forces may become the subject for investigation by a new service or committee are long and be regarded in all respects be given deep thought to the subject and be prepared to express their opinion as to how they were called upon to do so.

The Medical Director General said he would like to read his speech for the (historic) story of preparation for 'Heart of the Service'. The Club was fortunate in having the head of the Medical Service at the time with them that evening (Colonel) I have had had a most distinguished career. He was a fine example of man, and a superb one. As a medical officer he had proved himself of that type particularly suited to the Service, as all round man with a special predilection for hygiene. As a soldier he went through the thick of the fighting in France—always, working, always and well. As an administrator he had this element 'on his back' when the latter was Director General Army Medical Service and when he subsequently retired. It was therefore not surprising that his old Comrades (Doctors) was asked to present him with the honorary degree of D.O.C. (hon.)! His presence at golf and cricket was well known, he did his work and take the best time possible with his balls on one of the Army's 'Marine' courses. Even then he found time to add racing and flying to his sporting portfolio.

It was a matter of deep regret that the Director General Medical Service, Sir Murray, was unable to be present. Sir Commissioner J. Malvern was a member, but unable to meet, excused. He joined the S.M.C. in 1914, serving with distinction and gaining a Military Cross. He transferred to the R.A.F. on an temporary in 1917, and in the immediate aftermath of the war joined the Royal Air Force to have become the head of the Medical Service.

The President was certain that General Fennell was taking him (and his friends) for Comrades. Malvern could be doing the same if he had been generally for dragging them into the knowledge for they were both typically British in their attitude of politeness but he missed the members to know them and to see and drink their healths with the health of their wives and girls (applaud).

Lord General General H. B. Fennell, Director General Army Medical Service, who was hardly there at the time, and he much appreciated the kind invitation of the Club for which he had to write them on one of their events that evening 'to they all know'. The Army Medical Service were very closely allied though, especially, the First Medical Service Comrades and through the fact that they fought each other a patient in their service hospitals, the Navy looking after the medical at Chatham, Plymouth and Harbours, which the Army looked after the water on the 'Waters Hospital at Gibraltar'. Speaking of the lack of consultation for the Medical Service of the fighting forces and Fennell could be hoped that the day would shortly open when the present type of young doctor would again be found much more than in the Service. He was, of course, aware that a first Medical Service—and it is General Medical Service of course—was needed for the Service provided it was provided with the staff which were all regarded as an efficiency. In consequence the General said he must agree that the Club be there in order to select, how to be present and for the delivery, manner to which the members had requested to be, to be in order to be called upon to respond.

Colonel The Medical Director General said I am sorry to hear of it, but I do think the Club should regard its location should be one and going back here

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MEMBER GINER OF THE MEDICAL AND DENTAL OFFICERS  
OF THE ATLANTIC AND MEDITERRANEAN FLEETS

Figure 1. Left: 20% maximum length of male and female silverfish in a body length of 100 mm. Right: 20% maximum length of male and female silverfish in a body length of 100 mm.

[illegible]

1. The first step in the process of the development of a new product is the identification of a market need. This is often done through market research, which can be conducted in a number of ways. One common method is to conduct surveys of potential customers, asking them about their needs and preferences. Another method is to observe the behavior of potential customers in a natural setting, such as a store or a restaurant. A third method is to analyze data from existing products, such as sales figures and customer feedback. Once a market need has been identified, the next step is to develop a concept for a new product that meets that need. This is often done through brainstorming sessions with a team of designers and engineers. The concept is then refined through a series of prototypes and tests, until a final design is reached. The final design is then manufactured and marketed to the target market.

1. *General Information* (Name, Address, Phone, Email, etc.)  
 2. *Project Description* (What is the project about? What are the goals?)  
 3. *Timeline* (When will the project start and end? What are the key milestones?)  
 4. *Budget* (What is the estimated cost of the project? What are the funding sources?)  
 5. *Risks* (What are the potential risks to the project? How can they be mitigated?)  
 6. *Conclusion* (What are the key findings of the study? What are the recommendations?)

[illegible]

1. The first step is to identify the main topic of the document. This is often found in the title or the first few paragraphs.

[illegible]

The first two columns of the table show the number of cases and the number of deaths. The third column shows the number of cases per 100,000 population. The fourth column shows the number of deaths per 100,000 population. The fifth column shows the number of cases per 100,000 population per year. The sixth column shows the number of deaths per 100,000 population per year. The seventh column shows the number of cases per 100,000 population per year per 100,000 population. The eighth column shows the number of deaths per 100,000 population per year per 100,000 population. The ninth column shows the number of cases per 100,000 population per year per 100,000 population per 100,000 population. The tenth column shows the number of deaths per 100,000 population per year per 100,000 population per 100,000 population.

By the Commission on the basis of the following findings:

1. *What is the purpose of the study?*  
 2. *What are the research objectives?*  
 3. *What is the research methodology?*  
 4. *What are the results of the study?*  
 5. *What are the conclusions of the study?*





11/11/2011

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19. Finally,  $\lim_{n \rightarrow \infty} \frac{1}{n} \log \frac{1}{n} = 0$  since  $\log \frac{1}{n} = -\log n$  and  $\lim_{n \rightarrow \infty} \frac{1}{n} \log n = 0$  (see (1) with  $a = 1$ ). Thus,  $\lim_{n \rightarrow \infty} \frac{1}{n} \log \frac{1}{n} = 0$ .  $\square$

Journal of Management Inquiry 20(1) 3-17  
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RE Correspondents should reach the Editors on or before the last of the month preceding the date of issue. Letters that require discussion should be typed on double-sided paper and they should be addressed to the Editors, *Journal of the Royal Society of Medicine*, 11, Tavistock Square, London WC1H 9EP.

The University of the North Carolina System has been selected to be the first university to receive the award.

The Subcommittee on the postmaster's postage would be payable on money, I think, even if it should be substituted for the stamps and the postage meter for any use of the post card or the use of the postage stamp. I think one can pay postage, as we do now, "by stamp or by meter or by post office." The post office Postal Order for Subscriptions will be issued in the United States, and to make this different, the "Manager" company, who has the "United States Postal Order" form, will be required to report to all the different companies, including the "United States Postal Order" company, the different companies.

The payment of subscriptions by Robert Geller is return mailed, as it relieves the subscribers of the necessity of forwarding a cheque each year and simplifies the keeping of accounts.

Journal  
of the  
Royal Naval Medical Service.

Original Notices.

THE EARLY DIAGNOSIS OF MICROCYTARIA.

By GEORGE COLEMAN, J. MORRIS DUTTON, M.D., F.R.C.S.

Microtaria of the nervous system is much more common than is generally supposed. In cases of recognized epilepsy timely examination of the nervous system should be the rule, not the exception.

Not so long ago the writer of this article received from the health officer primary school two cases of cerebral epilepsy which were not even suspected until a dangerous crisis occurred, and has since seen several such cases. Every single case of epilepsy is a candidate for microtaria. Those with marked epileptoid symptoms have been said to be less prone, but even they are not immune.

Nothing original is attempted in this article: originality is not its purpose. Its object is to summarize some of the early features in the diagnosis of a certain set of conditions, to lay stress on easily observed features which can be seen and noted and tested with our own senses, and on the facts of our own work here, features that may reflect on themselves, so diagnosis microtaria: or being that will certainly come as to have the cerebral spinal fluid tested at the earliest opportunity. It is in this period that success may be hoped for from adequate treatment; any later time is too late.

A brief review of the general pathology of the types of conditions likely to be met with is not out of place as a starting point. Pathologically speaking we demand the time honored primary, secondary and late secondary divisions, and think in terms of nervous excitation and reaction. The reaction is a mobilization of the organism's own resources which attack and kill the peripheral tissues, but once they escape and take refuge in diaphanous parts of the circulation, frequently on the walls of vessels. The body becomes converted to the infection. That is to say



may bring in the substance of the optic. I have been obliged to make several ground nerves. Large granular condensation of masses of ground substance and also the choroid layer of the fundus. Various dark spots, especially at the optic root and both in the fundus and optic. "retinitis diffusa" in fundus, perivascularitis in optic. Pigment in it. I think root lesion, and so on. In both lesions and each full of numerous con granular masses, masses, all come into play with various following hemorrhage, perine and paralytic.

An abbreviated table is appended to classify all these lesions as recently for the study of the eye. I am indebted chiefly to Dr. Wilford Gifford who has Temporary Surgeon in the Service. But I have compared even his current tabulation.

(A) Secondary Syphilis: Meningo-vascular inflammation

(B) Late Syphilis: (a) Meningo-vascular syphilis of brain and cord. Interstitial syphilis. (b) Syphilis of brain and cord. Perivascular syphilis.

Meningo-vascular: (1) One or more vessels affected. (2) Multiple nerves. (3) Affections of spinal nerves. (4) Spinal root affections. Thrombosis. Syphilitic peripapillitis. Meningo-vascular. Hypertrophic meningitis. Dementia. (5) Brain affections. Cerebral thrombosis. Meningo-encephalitis. Growth of meningitis or brain substance.

Peripapillitis. (1) Spinal root. (2) Brain. Dementia, paralytic. Tabes paretic.

The above classification is reduced to its simplest terms. To deal fully with all these lesions is an article of the above, as is possible. To be noted, however, that cerebral syphilis may occur alone, as may meningo-vascular thrombosis. Either may dominate the clinical picture, and the reader has to default to various. Efficient treatment is the first goal, for it may cure the one. It can help against the other, and that is problematical.

Cerebral syphilis has one outstanding symptom, headache, and its characteristic feature of the headache is that it goes away at night. The patient is nervous, dull and sometimes delirious. He has a constant or intermittent, sharp, severe pain for the better, however. Hearing is also impaired, and he cannot concentrate his long. Intubation is the most usual striking symptom. It may amount to emphysema or relative blindness. The eyes show early signs, usually. (1) irregularity of outline. (2) irregularity. (3) early blurring of the edges of the optic disc. With a state of effusion or not uncommonly both effusion and a neural hemorrhage. It should be recognized clinically, and the diagnosis confirmed by further puncture at the earliest opportunity. The author found himself wholly unable to agree with one who recently represented to him that without the means of fundus puncture or deep he was powerless to diagnose such lesions.

Endarteritis obliterans is common in cerebral syphilis, often in the

distribution of the middle cerebral vessels. It leads to thrombosis, thrombotic infarct strokes, transient weaknesses, it may be a monoplegia or a hemiplegia. A stroke in a man under 30 is nearly always specific. Cerebral thrombosis, rare in local or quite extensive. A typical case would be one with a frontal infarct, a transient monoplegia, with subjective sensory symptoms and definite ocular signs. Cerebral thrombosis leads to infarcting in sections. That means lack of support for neighbouring and damaged vessels so that following the first transient stroke which quickly restores comes a cerebral haemorrhage with rigid, unconscious, paralysed limbs. Quite frequently there is no loss of consciousness.

Multiple compressions may be general, restricted or local, it is frequent near the motor area and can cause convulsions and Jacksonian fits. Hemiplegia is a rare phenomenon. The third may be localized progression over the infarcted area, and dominant, as a rule, begins early. It may become chronic and progressive. Local compressions has three considerable features: deep-seated headache, torpor, and paralysis of one or more cranial nerves. If the lesion were near the pons, where several cranial nerves arise they are severely more or less normal nerves would be affected, as they may be affected in their exit through one of the hemispheres of the skull singly or in company. Therefore ocular signs in company with convulsions, namely, cortical paralysis, squint, ptosis, pupillary phenomena, and optic neuritis; all in one eye. On the local nerve may be affected, as we will with second pupillary darkness and torpor. Both that the signs vary in intensity from day to day. A mild squint of today may approach eyes to closure. Large enough processes may cause general convulsions; they constitute one form of cerebral tumour and where there is independent pressure. Some convulsions may also occur.

Spina dorsalis may lead the localisation of typical spinal cord lesions. Whether it is my that a sudden lesion in the cord is probably a haemorrhage, and that it will cause paralysis below its level with decreased sensibility and possibly some electric effects. Thrombosis of cord vessels produces local weakness or paralysis and consequent degeneration of tracts below its level. The most rapidly inflammatory lesions take rather longer to develop but the subsequent effects are similar.

Hyperostotic compressions which affects the cervical and upper dorsal regions is slow in onset and produces the signs of compression with all the characteristics of protrusions: motor signs, sensory signs, sphincter troubles and root signs at the level of the lesion, with regional distribution of motor or sensory loss. A compressed ganglion of the cord produces the signs of a tumour of the cord.

Neuritis, local or multiple, is sometimes specific in origin.

Always exclude syphilis before diagnosing other conditions on the cord. Let us turn now to paraneoplastic affections.

To discuss metastatic processes from the cord simply because we find no evidence of evolution, of extravagance of weight strength of substance

with intense pain (distress-voice of misery) is the happy frequent expression of relief of the first magnitude. Even in the instant we meet to day that disaster partly true and false and frequently false again, in the following manner—by apathy and lethargy and lack of interest; by depression; with marked exaggeration of the causes of the symptoms; by acute delirious states, or by a fit.

The three characteristic mental signs we most establish in neuro-syphilitis and particularly in general paralysis are (1) defective judgment (2) defective memory, (3) defective speech. True there is a very early stage when symptoms and signs are absent; but the entire spinal fluid shows its characteristic changes. Thus, of course, in the ideal time to meet treatment with some hope of success. But every single person with a positive blood Wassermann is, as we have remarked before, a potential candidate for general paralysis. Accordingly, we must constantly be watching in such latent cases for mental changes, first the most subtle ones for reason, for judgment, changes in the reflexes, especially deep and rapid. Thus, a man with a positive blood Wassermann reaction, with a regular pulse, with almost healthy joints and one who is inclined to be forgetful maybe carries things, or constantly repeating a recently acquired mistake that man is diagnosed as neurosyphilitic by clinical grounds alone. It is high time to test the entire spinal fluid in order to check the diagnosis and to institute such treatment as may make what remains of a cure. It is often impossible for us observers to estimate defect of judgment or memory at one sitting. One has nothing wherewith to compare the present state. One must rely on the patient's statements, who frequently give valuable aid. They have a comparison of a most interesting character, and can detect the slightest difference what it was what was say, three months ago. For instance, they will tell you of a change in character of hopefulness, of deterioration both in judgment and in ability. The spirit commanding you has suddenly taken to boozing. The bright-eyed interesting person who has suddenly got morose and apathetic and lethargic. There is a new story of motherhood and lack of concentration; work has been neglected recently, and promises are not kept. He was a good workman but now he is more than satisfied with the most casual efforts. He is constantly forgetting obvious things, things that should be taken. They may tell you of some striking outcrop, irregular, unneeded for, revolting. It may be sexual, it may be disciplinary, it may be dangerous that it is wholly unlike himself, and consciousness has produced nothing but an unresponsive apple. Such are the types of valuable histories one learns to read and judge. Persistent repetition of an obvious error is always suspicious. The patient himself complains of two functions either an uncontrollable somnolence or measures of night. He is sometimes conscious of his hopefulness alarmed by it. He says he gets tired early. He is yawning. He may speak of headache or a bad digestion. He may tell you that his night sometimes gets dim so that he has sleeping pills about

a progressive degenerative mental, intellectual and physical, a degenerative change of personality, an undue weakness and emotional instability—all summed up in this expressive term of mental weakness, mental distress.

The differential diagnosis lies between alcoholism, neurasthenia, cerebral tumour and cerebral syphilis—with the last of which dementia paralytica is most frequently confused. The distinctions due to alcohol, of personality of memory, &c., particularly in the type with alcoholic tremor and Korsakoff's syndrome, may well be a puzzle at the outset. Tremor, especially, those in the ocular muscles are associated with excessive debauch and exaltation and early ophthalmic trouble. But in general paralytic the Wassermann reaction is positive in 70 per cent., and the blood reaction in 75 per cent. of cases.

Further, in a well established case we find an excess of globulin in the fluid, possibly a diminution of sugar, and the colloidal gold reaction of Lange gives a delicate curve—apart from the curve of syphilis, which, of course, it also represents. The fluid is under pressure, and there is a lymphocytosis ranging from 74 per cent. up over 600 per cent. (Fournier's count) due to the associated meningeal infiltration. The Wassermann reaction may be positive or *l. v.*, where *q* is doubtful or negative in lesser paralytic.

But the matter of course, is not for consideration in the laboratory, rather than a well laid method of diagnosis.

Spina prevents description of the early signs of tabes, and except where it is associated with general paralysis, the disease scarcely comes within the ambit of this article.

It is enough to say that the early signs of tabes are essentially sensory or dissociated, that the deep reflexes may be present for years after the disease is well established, that it is better to test the ankle-jerk than the knee-jerk, that lightning pains (despite their clear-cut features) are frequently mistaken for rheumatism or neuritis, and that crises sometimes lead to paraparesis.

Irregularity of pupils and lightning pains, in the presence of a syphilitic history, are enough for diagnosis.

Concise sensory evidence is found in early sensory impairment.

Hypostoma is synchronous with early signs, but the Argyll Robertson pupil is almost impossible, and the signs of late ichthyoid testicles, are a pointer by no means always found.

Moreover if they are found in association the case is far advanced—no longer one of early tabes.



## THE ADMINISTRATION OF A HOSPITAL AT WAR

By ROBERT JAMES L. S. H. (1917) (Part I)

LET us take the Naval Medical Officer as a hospital administrator, as the actual treatment of his patients. They comprise the most complicated medical activities which are generally understood as administrative, and administration of a hospital has a very important bearing on the medical care of the sick.

To the stimulating inspiring ability of Sir James Fyfe is largely due the efficient system of naval hospital organization as it exists to day, and I am sure that officers who served under him will readily acknowledge the debt they owe him in the important branch of their education.

The administration of a hospital as a whole does not, unfortunately, make use of the experience of all medical officers, and this is to be regretted. The experience of the Surgeon General led us this during some of a number of small hospitals in which comparatively junior medical officers, on change were brought here to deal with administrative problems which tended to develop the administrative interest and ability which would be so useful to them later on as Surgeon Captains and Surgeons. But Admirals on change of the larger hospitals.

The administrative experience lost in these small hospitals can be very largely gained by medical officers during their period of service in hospitals by studying the administration of their wards. The ward can be regarded as a miniature hospital and if an officer thoroughly understands the administration of his ward, as a part of the whole hospital, he will have gained knowledge which will be of the greatest value to him in the administrative position he may hold later on in his career.

I do not think that medical officers sufficiently realize the fact that to attain to the higher ranks of the Service, administrative ability is a necessary asset. The report which is rendered on a medical officer after his period in a hospital calls for an opinion as to his administrative abilities, including a statement as to his fitness to administer a hospital or hospital ship. The importance of this report as to administrative ability in determining an officer's future employment should be understood.

The lack of attention of medical officers to the administrative side of their duties was brought home to me recently. A young Surgeon Lieutenant Commander asked me what really was the use of the "wards" on a hospital. He regarded them as a nuisance and could not understand why most of them could not be done by a few berth party officers. On asking him what he did on his outside one found that for a year he had walked round the hospital at a steady pace without entered a ward unless for medical reasons, entered the ante-room, all corners of the sick berth taking and so soon as possible got back to the mess. On being asked whether he ever reported the food whether he noted that meals were



*detached* the spelling is possible, he transposes your words and moves them. Sometimes he takes away into scraps at the end of a sentence as if he were fatigued. There is a looseness in the writing, the penwork often is unbalancing, and the whole piece is set off by margins and by lines. One turns to the physical signs. Next to the tongue one looks to pupils and reflexes. The pupils show irregularity of outline, possibly an irregularity in size. There may there be a partial Agnifidirection pupil. If corneal reflexes are weak, and if irregularly done, look for motor muscle defects for squint and for ptosis, and maybe optic neuritis. In take patients one may find early and partial primary optic atrophy. The reflexes vary in type and in different periods of the disease. Speaking generally, the deep ones are exaggerated and the superficial ones damped down. Thus the abdominal reflexes may be absent, and the plantars not be crossed. But the deep reflexes may be absent at the start and then be more marked when taken as suggested. Only when the pyramidal cells are invaded by the virus do the deep reflexes get more marked. It is essential in taking these to use some form of measure if some is to be avoided, and equally necessary to use that all systems is taking off the body concerned. Quite early there may be difficulty in holding the labial sphincter. Tremor of the hands is well marked, especially if these are stretched forward or up over the head. Under signs of cramps and generalized weakness are early detected.

In take-patient lightning pains occur early and are frequently described as rheumatic. Careful questioning shows these are distant, then sudden over their equally abrupt departure. Their growing persistence characterizes their transients their repetition for minutes or hours at a given spot, their frequency about the perimeters of the face and feet, sometimes sudden weakness comes or sudden blindness—transient isolated symptoms; or there may be a transient palsy, a locking aphasia, or a passing mania. But one constant is early loss of and then, enough an epileptiform fit is the first apparent sign of gross nervous disease, or he may develop attacks of post mal or Jacksonian fits without loss of consciousness. Sometimes the epileptiform attacks he is confused, and stereotyped and repeated. There may be no definite convulsion. In adults, the most onset of an epileptiform attack should bring applies promptly to our minds. Finally an attack of some system may usher in the disease.

The patient is noted for aggressive and agitated beyond description. But to look that, a brought he has settled down into one of the most known types—the chronic marked delirious aphasia (the last, they show us in our student days) the depressed type, the apathetic type and occasionally an alternating variety.

But whatever the type and whatever the mental signs, some common features strike both the observer and the patient's attention when a progressive inability to adapt himself to his work and to his environment.

expended producing waste steam. The advantage of a central steam connection by means of various pipes is, aside, of course, of considerable economy. Inspection of beds, trunks and ward trunks frequently shows great dilapidation, which, if attended to at once, saves the necessity for either repairs or condemnation later. Bed springs are frequently seen in hospitals to be sagging and uncomfortable. The provision of a few spare ones and a pair of pliers enables the ward staff to maintain their beds in good condition for years without having to send them to the over-worked carpenter and blacksmith. Attention to the wheels and casters of tables and lockers not only prevent them locking from accumulation of dust and dirt and becoming seized up, and finally breaking off, but prevents wear and tear of the floor or corridors. The immediate repair of worn-out lockers in the female lockers and wards often prevents development of rube, scabies, etc. It is possible that articles of furniture could be kept in better condition by the provision of a spare spring to the hospital carpenter.

I append some notes on details of ward administration which I have found useful for incorporating in the orders issued for the conduct of wards.

**Wards.**—To conform with the regulations must be well lighted, well ventilated and clean. Clothing not in use to be neatly folded and stored in its proper place. Clothing not to be stored on tacking on the night.

**Bed Lavans.**—All personal gear, viz., lockers, writing gear, to be kept in the lavatory.

**On bedside shelf.**—A few clothing gowns, drawers. On bottom shelf—linen clothing always to be neat and tidy. The bed table is washed at least once a week, shelves removed when cleaned, rubbers on wheels to be clean and whole.

**Drawers.**—To be stored in each room (or lock cupboard if available) clean and well pointed to the front.

**Blackboard.**—To be stored under the bedside table with toes to front.

**Trunk and Foot Locker.**—To be kept on end at head of bedside table—out in the doorway of bedside table.

**Chest.**—To be kept at foot of bed when not in use.

**Wardrobe.**—Ward springs to be kept in order, all broken parts and all clips present. Castors to be free-running for comfort and to prevent injury to floor.

**Wards.**—In unoccupied wards to be tidied up as in Royal Marines Barrack rooms. They are then kept clean from dust and are always ready for use. In occupied wards corridors must be continuously made up, either being folded into the sides of the bed or else hanging free over the beds. One pillow and one bolster to each as standard. The bolster to have a case or to be kept under the sheet. Pillows not to be used unless in a corner. The bed should be padded at regular intervals to prevent a lumpy lumpy and it is advisable to change the date of padding on the bed.

**LEADS PANTS.**—To be worn put into drawers and drawers and closets. They should be stored so that contents present a square face to the front. Legs to be kept by the owner with both ending of the waist. Never allow patients to help themselves to clothing. As the tops of pants and undershirts to be always kept free from grease and dirt.

**PANTS CLOTHES.**—The legs to be always in possession of the doctor or nurse with both ending of the waist.

**SHIRTWAIST.**—Woolen well scrubbed when. Knees and backs—clean to both feet. The waist dry and clean from grease stains. This is kept covered with grease.

**SHIRT.**—Pants to be kept clean with the back pressed and which is kept in a box of drawers at the side of the pan. No deposit in the drawers to be allowed in either of the bottom of the pan. Hands are not to be used to remove stains, as they destroy the grain of the material. The pants to be washed once daily.

**CLOTHES DRY.**—To be stored in place pressed. Handled trousers—stored with head upright and closed from staff. Stomach gear—to be kept in basket. Dry cleaning bags, jackets, etc., in wooden box.

**UNDERWEAR AND SHIRT.**—Based on clean towel, which will prevent breakage when the articles are placed on a table cloth. Keep dry and plug in walls with cotton wool plug to keep out dust or, preferably, keep the pants under a rack or make so to keep the work hanging down. This will obviate the use of the wool plug and prevent risk of the work being damaged in the work among a disordered clothing.

**SHIRT DRESS.**—To be stored in a plug in hole in rack.

All gear which is not likely to be used should be returned in store, then saving labor in keeping it in order and preventing economy by preventing the being able of capital.

**UNDERWEAR.**—This is to be stored in an undecomposed set of three to be frequently met with in waste and consequent waste trouble. These are frequently contaminated dirt and small and have a highly clean on them and patients. Hands should be kept clean with water only disinfectants being used only on admission when in a hospital for replacement. Dress.

**UNDERWEAR OF CLOTHES MATERIAL.**—Attention to this will obviate the common use of but not allowing material for this purpose and result in economy.

**UNDERWEAR.**—No administration is complete if cleanliness is not observed. If the various checks of a hospital are reaching different times, defilement are always among and results in patients meeting in cold corridors outside operating theaters and loss of time to everyone.

Finally when the system of sanitation is complete, it is essential that the medical officer should exercise personal supervision over the details. This can be done by spending a few minutes daily in inspecting his wards on completion of his medical duties. A badly organized hospital cannot be



There is sufficient boarding space on board ships for all sick and wounded persons, and the medical officers of the port are in communication with the medical officers afloat and land, including during the transmission and receipt of duty. Food is up to be problematical as regards amount and hours in which it is obtainable according to the number of vessels requiring attention. It is remarkable, however, how well one can get on with food, even at irregular times and doing without sleep one night or more. It is no guarantee the medical officers gain forty eight hours rest after ten or twelve hours on duty, and in case of ships may be caught up on that point.

The boarding of vessels is carried out from one of His Majesty's Customs launches, which calls for the medical officer at the boat. Hygiene is requisite. These launches are about the size of a dockyard launch. They board and have a small cabin all providing shelter and accommodation for the Customs quarantine officer and the medical officer in which to make up records, &c. The quarantine officer has the records from foreign ports and on admission to other ports puts the all important ones. "Have you had any deaths or sickness during the voyage?" and "do you all well on board now?" The critical moment of the Master of the vessel, given under penalty is accepted in the case of some Continental leaders, but records arriving from ports in the Eastern hemisphere, south of latitude 40° N. (except European ports west of longitude 40° E.) and ships from ports in the Western hemisphere, south of latitude 40° N. are inspected and are boarded by the medical officer. If a surgeon is carried on the incoming vessel he is interviewed and a certificate obtained stating what illness has occurred on board during the voyage. Native Indians and other Asiatics are inspected whether a surgeon is carried or not and in vessels not carrying a surgeon European crews are inspected and reported also. The surgeon's certificate covers passengers and European crews, though when passengers are subject to inspection.

Any sick persons are closely examined and if any infectious cases are on board they are removed to an ambulance launch to the Port Sanitary Hospital situated on the river bank below Greenwich at London. Some infectious cases come of tropical diseases, venereal diseases, &c. as well and abroad of the nearest hospital to which appropriate treatment is available. By arrangement with the Western Hospital Society the boarding medical officers maintain close going the admission of these hospitals which the medical officer signs together with filling in a few particulars. The Western Hospital Society has no large institution, the Hyacinth-sprout Hospital, at Greenwich and branch hospitals at the Royal Albert Dock and Tilbury, and the Hospital for Tropical Diseases in London. It will thus be seen that the work of the mercantile marine was well provided for in regard hospital accommodation in the Port of London.

The inspection of crews, interviewing of surgeons or masters of vessels, obtaining of certificates, &c., is carried out with the incoming ships under way between the Queen Dock in Higham Reach and the previous houses at

deserve to be said. That the discipline of the ward is more shared upon the medical officer than upon the hospital administrator, may give the reader some reason why the medical officer usually, and necessarily, has not that great responsibility which is assumed as falling to his part of liability at sea. He tells me afterwards that on one hospital the question of his duty as a different type and had long felt that there was something at variance about it. In a hospital it is obviously impossible that every medical officer can satisfactorily organize his ward according to his own ideas. The organization of the hospital must be organized as a whole and the medical officer in the land hospital is that such Hospital Captain organizes his ward subject to the decision of the Hospital Administrator in all things.

It is the duty of the junior medical officer to carry out the general wishes of the officer in charge of the section, so whilst doing his ordinary medical duties he should always keep in touch with the administration of methods. An administrative organization is initiated by one individual medical officer but as time passes it has come down to a series of experience, but has been and much be developed by the individual to conform with existing conditions. The naval medical officer must have come down to begin on, and that he should acquire during his periods in hospital as the junior rank. He should keep a watchful eye on all routine methods but he should be constantly reflecting them to himself and thinking out ways in which he could improve on them. This lesson will be found of great use to him, not only in hospital but when he becomes a Squadron or Fleet Medical Officer and is made deals with the varying medical organizations of the different ships of his squadron. He will be able to nominate the best features from each ship he visits and use them in the organization of his own flag ship or in that the medical organization of his flag ship may be, as it should be, an example to the rest of the squadron.

The concept is always one of progress and every medical officer can improve the efficiency of the hospital by his help and suggestions. Hospital organization should have three main objects in its view: (1) efficiency as a hospital for the care of the sick; (2) discipline; (3) economy.

The efficiency of a naval hospital is very largely connected with what is known as discipline. The word discipline often means the fact that it is connected with punishment and naval history suggests that discipline frequently was and is maintained under threat and by fear of consequences. In naval hospitals we are dealing with men who are brought up in this discipline but as medical officers have practically no power of punishment or of ruling by fear, they have had to evolve a code of discipline in their staff and patients by other means.

I find very strongly that ward administration has increasingly evolved the system of discipline which is so essential to our hospitals. We run the equivalent of a large ship's company, and we have evolved, without power, a code of discipline of our own which is practically free from crime



and has more of the rest, which are frequently associated with punishment and power. The naval hospital is worked precisely without a punishment list and its attendant waste of time in book officers and men.

The naval rating is trained to place orders as a part of his discipline and when in hospital it has always appeared to me that it is essential that this system should be continued. Ward administration gives the medical officer the opportunity to carry on this system. The organization of his ward demands that he shall issue various orders and these orders must be obeyed. It is obvious that the nature of these orders should have a direct bearing on safety; they must not be chaotic, useless orders. The orders should be printed and posted upon the ward notice-board for general information. A great value of these orders is that it enables the nursing staff to give orders and places them in a position to supervise the carrying out of these orders. This is a tremendous help in giving them an authoritative position in their wards. It frequently happens that a junior war, health making is left in charge of a ward containing a population of sick and convalescent ratings considerably worse to him. If he has no authoritative orders which he can issue and direct as being obeyed he is placed in a difficult position. The knowledge that he has these orders and that it is his duty to see that they are carried out places him in a strong position of authority in his ward and thus incidentally develops his character. Attention to the administration of the ward places the medical officer with the assistance of the nurses he will use, and constant repetition will ensure that they are carried out. The actual orders issued will depend to a certain extent on local conditions but most of them are requests and commands to any hospital staff function to provide order and discipline.

The economical side of administration is important. The late Surgeon Rear-Admiral Lewis gave told me that the elimination of T & B wastes for men in his hospital during the war led immediately to an economy of 50 per cent in the gas bills of this hospital. The average woman will turn out a gas ring after use, the average man unless supervised will let it burn until the next time it is wanted is at best ten or 15 min. On one occasion a Surgeon Rear-Admiral called my attention to the excessive water consumption in my wards. On investigation I found that medicine water was going on and that with no loss of efficiency a saving of several thousands of gallons of water per day could be made. Inspection of the lead-offal line shows if any waste of fuel gas is. It enables the medical officer to see what articles are eaten and what are wasted by being thrown away. He can then adjust his diet charts accordingly by checking food in and at the same time he finds out what diets are popular and when are not. Inspection of laundry baskets frequently reveals that excessive laundry is being sent, sending out only as many towels, blouses and waste of soap but also as useless wear and loss of material. Attention to contents of cupboards and storerooms often shows that stores have been allowed to accumulate and perhaps are not as use, whilst other sections of the



the men who have shared the same accommodation as the patients are occupied with bedding and stores, and are bathed and the bedding and stores disinfected. This is carried out at the hospital ashore in a special block provided with dishes and top bath steam disinfectant, and dressing and dressing rooms—all under one roof. The accommodation retained by the crew and contents is meanwhile sealed up, impregnated with sulphur dioxide and washed with red. The entire personnel of the ship is closely inspected for possible body cases. Vaccination is offered to everybody and with a suitable preliminary address to the assembled people—passengers and crew—infectious diseases is explained to most cases from convenient objects. The addresses and decisions of everyone aboard are taken and carefully checked and the physical state of each person noted. These persons, who are suspicion of their possible whereabouts during the four last days preceding the date of loading are provided with cards which they must forward each time their address is changed within the last ten days. The names and addresses of everyone on board are forwarded at once to the Medical Officer of Health of their various destinations and the passengers and crew are thus kept under surveillance.

In ships which carrying some 250 passengers and a number tonnes of cargo the routine is carried through in some three to four hours after which the ship is free to proceed to dock. The quarters under and for baggage are opened a short later under the supervision of a sanitary inspector of the Authority.

Vessels infected with plague under strict delay. The routine of removing stores and contents and the surveillance of passengers and crew on the same as on plague-infected ships, but from the public health point of view the important factor is not the plague-infected crew but the plague-infected rats and fow on board the ship. It is therefore necessary to carry out measures of rat destruction at the earliest possible moment and measures to prevent any rats getting ashore.

When sulphur dioxide was the best fumigant for rat destruction it was not reasonable to expect to kill all the rats on board by fumigating the loaded ship. It was therefore necessary to make a *ry* plague-infected ship, as the crew discharge the cargo on-boards into lighters under supervision, and finally to fumigate the vessel when empty.

Since the introduction of hydrocyanic acid gas as a fumigant we have come to believe that this gas being heavier to any kind of cargo and being more difficult and tedious to work than concentrated gas, that sulphur dioxide will destroy almost all the rats even on a cargo laden ship. Plague-infected or suspected vessels are now, therefore fumigated with hydrogen cyanide before the discharge of cargo is commenced, and in case any rats may have escaped the first fumigation the process is repeated as soon as the vessel is empty.

It is still necessary however to supervise the discharge of cargo in order that no rats may be landed in public places, etc., and in

dominate or good way to meet a which one might have been the cause of the disease.

The work of a hospital, and of officers full of anxiety, and he has to be for ever on the go and on. He never knows what his case is and no then to not it is the one up each which comes up. Day and night goes on and goes on, in all directions—and it can be very wet work in rough weather even the water up comes from the North—there is a medical officer on duty having something to do from selected cases. Sometimes during day he actually manages to look off his boats and get a few hours sleep but either he or his successor gets the "closing up" up to do when the day takes. It is not an unknown thing to have a hundred ships all waiting to be loaded and cleared, and possibly twenty of them to be loaded and have their stores unloaded in, at such a time. My own vessel was 125 ships in twenty four hours at which the first two hours on duty were a sea fog, and the darkness had to be done at night. There are three or four, however, with the lucky right to follow, when the work is very pleasant indeed, and of course one looks also of interest there are numerous and various which are often in situations to compensate for the distress water, mouths and for the loss of sleep.

#### 14. NAVIGATION AS IT APPLIES THE NAVY (A.P.O. 465/98)

By the order of the Admiralty G. R. HAYES, R.N.

Article 25 of the International Sanitary Convention of Paris, 1894, all Royal Fleet auxiliary vessels including hospital ships require destination certificates or destination exemption certificates such certificates being valid for six months only, with an extension of one month for a ship proceeding to its Home Port. The certificate must be produced by the master of the vessel on the demand of the Port Medical Officer of Health. R.M. warships do not require these certificates, and it is not anticipated that they will. The modern warship is almost not good, and one that do give certificates have very little hope of success.

The Civil Port Sanitary Authorities in the three Home Naval Ports, have no objection to issue their destination certificates, and arrangements were made with the Ministry of Health that these certificates should be issued when required to naval vessels by the naval health officers of the three ports.

The blank certificates are issued by the Ministry of Health and each one is made out in both English and French. There is one line to every hold and compartment in the ship and the requesting officer has to answer the following questions: (1) rat infestation, (2) rat burrowing (plague) and (3) how corrected.

If the vessel is given an exemption certificate the measures taken for

and having, one more, by which a condition of infection would be confirmed or a diagnosis positively stated.

If the condition described in the following paragraphs does not, in given or addition —

(1) By tampering. Tampered with boxes of specimens, the interior space of each compartment, the quantity of tampered with and the number of rats recovered.

(2) By catching, trapping or poisoning, under each compartment the traps set or poison put down here in the given, and the number of rats recovered.

Four copies of the certificate are made out and distributed as follows: Bureau of Naval Sanitary Administration, U. S. N. C., Ministry of Health, one copy retained.

The primary object of Article 88 of the International Convention Convention of Point, 1911, is of course to prevent the spread of infectious plague, but it is interesting to note here what other diseases can, or may be, spread by the rat. It has been found that a large proportion of apparently healthy rats are carriers of one or other species of potential parasites.

(a) *Trypanosoma lewisi* considered to be non-pathogenic. (b) *Synanthus antrophomorphus*, *Wid's disease*. (c) *Spore-like* *microsporidia*, *Wid's disease*. (d) *Spore-like* *microsporidia* *Wid's disease*.

As well as these rats suffer from —

(1) Rat tuberculosis (rat leprosy), caused by an acid fast streptothrix. This condition resembles even T. B. very closely.

(2) *Parasitization*, resulting from infection with a member of the *Tricostema* group.

(3) *Tachinids*. Large numbers of rats caught in slushes have been found to be infested by *Trichinella spiralis*. It is thought that pigs become infested by eating such rats and human beings in their turn develop trichinosis by consuming unspiced, cooked pigs' flesh.

The following chart obtained from 'Notes on Naval Hygiene' 1914, illustrates the distribution conveyed by rats —



It is obvious that the transmission of rat parasites can only be made with a reasonable degree of accuracy by inspection with a magnifying glass the interior of traps and with the various signs by which rats reveal them.

presence. The various regulations into consideration are: (1) presence of vessels (land or state), (2) rate, (3) sailing or going, (4) access to wharves to cargo boats, &c. (5) in difficult cases, but in a fairly limited number of cases, (6) how to deal with them. Visits are made at twelve-hour and half-hourly intervals, and evidence noted as regards amount of loss, disappearance, location, and presence of vessels.

Inspection should also know what conditions on harbourside, namely, place in which rats may remain day and night, for considerable periods without being disturbed. This includes post-changes, dockside partitions—open under tables, unimproved large accumulations of refuse or luggage, and spaces among ships to which rats usually moved. In this respect great health officers are concerned to get rats touch with the post medical officers of boats at one of the following ports (Bristol, Southampton, Southampton and London) and to arrange to attend at the post to harbour health with the methods employed in the detection of rats on merchant ships.

Whether a destination certificate or a destination exemption certificate is granted depends entirely on the officer carrying out the inspection, so to what number he considers it necessary to issue than a certificate of rat on board. His only guides are the experience gained by visits to the merchant shipping ports already mentioned and his own experience as an inspecting officer. In a destination certificate always requires the heavy cost of a destination the matter is one of some experience. Fortunately the third ships we have to deal with are Royal Fleet Auxiliary ships, and it is quite likely that it should be possible to examine the rat population on on board these ships at a minimum by means of (a) rat proofing (b) provisions to prevent the passage of rats to and from the ship, (c) when being alongside piers, &c.

(d) Rat proofing.—This is the ideal method to use at, and on my visit to Southampton I found that the big shipping companies in order to avoid the heavy cost of fumigation and the unavoidable upset and loss of time to the ship caused by such a measure, had taken up the matter of rat proofing very thoroughly and were spending a very few months of pounds in an endeavour to maintain these ships rat population at a minimum. There is no doubt in my mind that this question of rat proofing will be very carefully gone into in the building of new ships, and that it is already being done notably in the United States. A merchant ship may be defined as one in which it is impossible, or very difficult, for a rat to take food or water there in such a food and drink.

Finally stated rat proofing consists of—

(1) Placing Calcein in rat proof containers in an open where rats cannot enter. It may be mentioned here of the importance of the immediate disposal of all food refuse and garbage and that no food scraps should be allowed to be about on decks, &c.

(g) Blanketing dead spaces in ship's structure and closing those which are present by means of test panel material.

(h) Airlock openings closed by metal curtains or by doors and windows, inseparable in use. Where such work is necessary for ventilation purposes, heavy galvanized wire netting, half each mesh is considered *not good*.

(i) *The Securing of the Passage of Bats to and from Ships*.—This unfortunately is a much more difficult problem and the question of test guards is at the moment not quite satisfactory, but experiments are being carried out with electric test guards and other methods employing the effect of darkening lights on animals. There is also the question of closing or removing all gangways leading to the deck during the dark hours, blanketing the ship off above so as to be some feet from the deck side or jolly and blanking all access holes and other openings on the deck side—muzzles to be closed during dark hours, &c.

When a destination certificate is decided on the naval health officer informs the voyage agent, who advises that the vessel is qualified against Immigration, and the latter arranges direct with the Admiralty for this to be carried out by a flag of convenience.

*Precautions*.—The following are the best known methods:—

(1) Liquid cyanide (hydrocyanic gas) concentration required 0.81 per cent. This is the method used by the Admiralty authorities. Length of time required from 'start' to 'all clear', 10 to twelve hours.

(2) *Ethylene B* cyanide preparation.

(3) *Cyander* process (cyanide preparation).

(4) Sulphur dioxide, with sulphur at the bottom to use 2 lb. per 1,000 cubic feet at 4 per cent. concentration. The time required is considerably longer than by the cyanide process.

All these methods have the added advantage that they destroy other forms of vermin, e.g., lice, scurricanes, bugs, &c.

As Immigration by cyanide gas is a highly dangerous proceeding certain precautions are taken:—

(1) A written statement must be obtained from the Master or First Officer of the vessel that the ship is ready for Immigration, and that every member of the crew has been instructed for its use being on the vessel or the ship exposed to the fumes of the gas.

(2) The contractor has to give the Master or First Officer a certificate when Immigration is over that the ship is clear of gas and ready to be at sea.

(3) Compartments above deck should have danger notices exposed as the deckwork after Immigration has commenced.





fresh trees, and an extensive library also maintained in the past year and 1/2 per cent. of beds administered chloroform and ether and general anaesthetics.

Most of the patients, women, are poor and not particularly bright, though extremely clean with advanced education here, a poor condition here. The women patients, even non-demented with contracted fingers are extremely adept at elementary manual button-making, etc., and they do all the laundry for the male lajeas as well as their own. The men are employed in public works (at a wage) sometimes making gardens or fishing, and all capable of doing required to do a certain amount of work a week for the institution. The children spend a few hours at school each day. During week week making canvas and various other games are very popular. Western light has been installed, a gift from the people of New Zealand. The plant also works a small cinematograph and a cinematograph which projects on an outdoor screen and is a great boon to the patients. They are given games by the various companies.

To all cases, chloroform oil is given by mouth up to the point of tolerance (about 1 to 2 per cent), and then is supplemented by a weekly intramuscular injection of either sodium glycerolates, alcohol (1 to 2 cc of a 1 per cent aqueous solution) or the alcohol-ethyl ester of chloroform oil. Dr. Hall is of the opinion that the *Myristicium* type probably develop drug habit to a great drug if continued indefinitely, and that infection establish a tolerance to a drug given over many months, this being shown by the absence of treatment reaction.

Patients react to treatment by coming out in reaction rashes—highly raised erythematous patches which appear mostly on the trunk and which disappear in a few days. It is not possible to change to another form of chloroform, and sufficient occurrence of lesions is again almost invariably obtained. The ethyl ester very closely approach the oil in reaction, but the possible local reaction they set up precludes their substitution use. Nevertheless they were tried on a large batch of *Myristicium* in 1926-27. Hydnocort has been used but is now discontinued. For the severe nerve pain in the prepared cases ethyl esters from the oil of the *Dela* tree (*Colophyton lajea*) have been used. These late groups near the shore on most Pacific islands and the oil extracted from the kernel of the nut is used by the natives in making a liniment which they say is good for rheumatism. One injection of 1 to 7 cc, intramuscularly on the back involved, with an analgesic, the effects of which last for a considerable time. This preparation has also been used as a direct therapeutic agent for the primary condition with very encouraging results, a batch of advanced cases were being treated with this since in 1926. Dr. Hall was kind enough to give me some of the material at which is being used for use on some cases of cancer and tropical leishmaniasis in the Auckland General Hospital. The results of treatment have been most encouraging. To be categorized as improved, a patient must have shown definite improvement as evidenced by return of walking, loss of motor paralysis and infiltration.

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Year	Age	Sex	Height (cm)	Weight (kg)	BMI (kg/m <sup>2</sup> )	Blood pressure (mmHg)		Heart rate (b/min)	Fasting glucose (mmol/L)	Fasting insulin (mU/L)	HbA1c (%)
						Systolic	Diastolic				
1990	20	M	175	75	24.5	120/80	75	5.5	10	5.5	
1995	25	M	180	85	27.2	130/90	80	6.0	15	6.0	
2000	30	M	185	95	28.9	140/100	85	6.5	20	6.5	
2005	35	M	190	105	30.3	150/110	90	7.0	25	7.0	
2010	40	M	195	115	30.3	160/120	95	7.5	30	7.5	
2015	45	M	200	125	31.2	170/130	100	8.0	35	8.0	
2020	50	M	205	135	32.2	180/140	105	8.5	40	8.5	

Male (unmated) were 100–120 mm, dark mostly with negative sexual and without individual and diurnal color. Sexual color on body weak, but showing some. Females (unmated) with no coloration on wing and body legs. Head purple, not (age  $X_1$ ), but not orange.

It is interesting to note the higher percentage of "improved" earlier convalescent and convalescent as compared with corresponding normal cases. While this observation, the former do not go on to the large as do the latter, but still the advantage for a more rapid recovery. Convalescent leprosy is found to be very transitory and it is hard to be certain of a cure. I saw one case who was being brought up for surgery to excise what just came out as certain nodules all over the trunk, these were pink round nodules were. The man is but a further couple of years on the island. Fifty three cases were discharged in 1933, which is 14.4 per cent of the total patients. 50 per cent of the discharges were fully cured, the average time to hospital leave 5.5 years.

The following is the schedule of cases adopted. They must be one year short of all others open. There must be no rise before, the next must not be inquired for any years and they must have had complete systems during the period. During this time they are housed separately in "Curry House" and women are taken from all companies after 18 years.

<sup>2</sup>Secondary operations for nerve stretching, removed from program and suspensions have diminished in number, there being twenty-one performed in 1934 and only eighteen in 1935. Suitable cases do not now present themselves for operations, though patients submit to them as freely as ever. This may be due to increased knowledge of the disease.

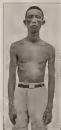
I now listed thirty cases which were going before the survey board the following week: photos were shown showing the original condition and I was amazed at the upturned results. Many men have undergone very serious melioid but now have a normal appearance—some slight swelling at pubic area of the skin showing the site of the original lesion. Some of these cases had palpably enlarged their testes, but no urinary loss or pain. Some men showed disappointment over the size of an old abscess, but most of them had shown without a Mumps.



284. *Marion. Marcellus, son of James, Jr. (1877-1907). Father*



*Marion. Marcellus, son of James, Jr. (1877-1907). Father*



*Marion. Marcellus, son of James, Jr. (1877-1907). Father*

My Japanese is a Purbeck official country's treasury, and I am surprised that this state these people are being made, with. Technically, the country that is the most typical of it is on the island, especially the Japanese, who spend most of their lives on the island.

My thanks are due to Dr. A. Kington, Chief Medical Officer of Fiji, and Dr. R. A. McIndoe, who spent over five years in charge of the public health and has brought it to its present state of perfection; for permission to publish these notes, and for supplying me with a copy of the "Fiji Annual Medical Report" for 1926, from which the figures were obtained.

#### REFERENCES.

1. Fiji Annual Medical Report, 1926.
2. Fiji Medical Service, 1926, p. 220.

### THE QUARANTINE STATION AT KANAKA

In Samoa, LITERATURE & ARTS.

For pilgrims going to Meva by sea, from Indian ports and the East, there is a quarantine station at Kanaka Island in the Red Sea. This bay, on the Samoa Peninsula, there is another for northern pilgrims, and a return of the annual report of the, was recently appeared in the *Medical Journal*. It is the first part of the 'Vina' week of Kanaka, and two days, showing every, there is a third.

Kanaka Island 10° N., 45° E. is two or three miles west of the Arabian coast, some 250 miles from Aden, and contains more miles by sea. It is low, bare, and uninteresting, though early this year, 1920, there was some vegetation that would, due to the seasonal rainfall.

The entire Arab population is 4000-5000 of whom are in the town of Kanaka on the eastern side and the rest in some small villages. The chief employment of the men are in the quarantine service, fishing or fish drying.

On the north side of the harbour at Kanaka are the quarantine administrative offices and the headquarters of the island. Here there are also the custom station and the electric power and water distilling plants.

The first pilgrim camp has had a main kitchen and on the side, and the second a main.

The Arab town is at the head of the harbour or western end. At the north western corner is a curved lock built by a Portuguese, already, in 1480, in the days when Portugal had an eastern monopoly of trade. On the southern point there is a small Arab hospital maintained by the administration for the natives.

It is small, with accommodations for a dozen or twenty, and is bare and

comprised, one clinic, the other a junior Indian doctor (two nurses) and two compounders (one nurse on each day of 12 hours) and a medical store.

Both the medical clinic and the quarantine station were controlled by Dutch officers for the general supervision of an International Board of Control.

A British Civil Administrator under the Indian Government (now in general charge of both).

The British Indian and Dutch Governments inspect the quarantine.

The medical staff consists of three Indians, one of whom a German with clinical expertise, the female physician and a Dutch representative who examines the Dutch East Indians. There are two disinfecting stations, each with a camp adjacent to it. Each camp has a comprehensive (and physician if necessary), and is surrounded by a high wire fence, the central camp buildings being built of bamboo and meeting with wooden floors. Back streets with bamboo roofs and concrete floors are actually replacing the huts.

In addition, there is a small residence camp, a small physician hospital, and a bacteriological laboratory.

The physician hospital is rarely used, as I was told that such pilgrims—e. g. one man with double pneumonia—preferred to go on to Mecca, at whatever risk to their lives.

The disinfecting station on bank of beach, with the steam disinfecting chamber in the center, which communicates neither with the "dirty" nor "clean" parts of the building. The medical inspection room also joins the two halves. There is a separate female section.

The pilgrim season starts in November and finishes in the middle of May, the average annual total being now 40,000. A recent epidemic example, those who have been vaccinated against cholera and smallpox from landing at Kamama. Only the Dutch East Indians are protected, and instead they are inspected on board ship by the Dutch doctor.

There are refugees from other ports, chiefly Bombay or Karachi, have been vaccinated only against smallpox, and are landed for medical inspection and disinfection.

These latter spend one night at Kamama after disinfection, if no plague, cholera, or yellow fever is found before reporting their day. Under the British regime five days were spent by the pilgrims even in the absence of these diseases, consequently there were no escapes reported, whereas in day two escape was simple for any necessary quarantine.

An escape here may be frequent. The shipping of the pilgrims from India to Jeddah is now in the hands of one company, under Government supervision of consular.

The return fare is 54 rupees (\$2.16), of this 30 rupees (12s.) is paid by the master of each ship to the quarantine administration. Considering this tax per head and the large numbers, the quarantine service must be

self-sufficiency, and any money has been spent in providing food and clothing etc. — the electric light plant being a recent addition.

Dr. Johnson, the principal Indian doctor, kindly let me watch a day's load of pilgrims being examined and disinfested one morning. There were over eight hundred men, a hundred women, and half a dozen children — the pilgrims being aged 7 on an average.

Heldmann and other Central Asians were the majority, others being Indians from all districts.

They showed Heldmann had supplied some of the swillings being consumed, but they manifestly showed them.

Each day at evening or night, entered the station at a time, the passengers in the female section being the same as in the men's.

The men stopped exactly and received two clean swappings instead receiving only money and passports.



Figures of Pilgrims

Also this visit only there were really thousands. The station, then the new station for them was built, which was covered by two large, concrete domes and with a triple row of green-painted concrete roof.

The water here, which was brought from the south was a strong, like a tea or banana water, of health.

Many (very accordingly) were, nevertheless, supplied on horse, as the city was found to be the same commercial.

There was no, not only the work themselves had to do for them by daily attendance with a shower of sticks and guano. They were supposed to a day-longness on the 'clean' side of the building, where their disinfested clothes were ready for them.

From at 119 d. was used for disinfecting most articles of clothing,





unstriated. Stomach and intestines did not resemble the disease in its species, but this being that the lesions were due to ordinary putrefaction which had passed across through some slight case of disease of the skin referred to the heat of a tropical climate. Various anatomical and anatomical experiments have been related, though in other numerous relations have been accurate. Simulations and support in Uganda. In example connected more histologically with negative results.

Recent work has shown that the disease is a venereal one, and is usually associated with some slight case or infection on the genitalia, the often having disappeared before the lesions make their appearance.

General Analysis and Types, in 1912, described a condition which supports identical with climate, but under the name of *Lymphogranuloma venereum* (syphilis) of a new species, probably part of the venereal, and notes that both Phylloides and others have argued the identity of the European and tropical conditions.

The final result work upon this subject is a valuable monograph by Ernst Hoffmann, entitled 'A Contribution to the knowledge of Lymphogranuloma venereum lymphaticum' published at Stockholm in 1919. In this work he supports the view that climate fever is a disease not generic identical with lymphogranuloma venereum and of a venereal nature, also identical however with Phylloides as put forwarded and by him and Graham.

Similar cases have now been found in Sweden by Hoffmann for the first time, and his description of these bears out their similarity to climate fever.

In coming to a diagnosis of climate fever all other ordinary causes of fever, such as typhoid, and also herpes, prostatic, tubercle, pneumonia, trauma, or infection must be carefully excluded and noted symptoms with typhoid, are most to be considered. At the present day the Wassermann test helps one in distinguishing the condition from typhoid, and now the more numerous reactions introduced by him at the end of 1911 is claimed to be specific for the disease. Hoffmann, comparing local and positive in all his cases. When the reaction is positive a whitish unstriated papule 7 to 20 mm in diameter, frequently surrounded by a lighter halo 4 to 15 mm in diameter, appears, and is very characteristic.

The antigen for the intracutaneous reaction in Hoffmann's cases were prepared from pus obtained by puncture of the lesions and by centrifuging upon the sterility, unstriated, glands and afterwards pressing the pus from them. The pus was distilled to give 10-150 times its amount with physiological salt solution and afterwards heated in a water bath at 60 C. for two hours on one day, and one hour the next, the liquid slowly being kept stirred up. No carbide was added. Thanks to the kindness of Professor Irm. he was also able to use an antigen from cases of lymphogranuloma venereum in Germany.

Of these antigens 0.1 cc. is injected intracutaneously and the result is read off in half, eight hours. The reaction should be given with an

measured 8 mm. thick, and one may infer from that it is approximately twice as long, as otherwise the section will not take place in any such way.

The results are confirmed in respect diameter between them as shall take, based on the greatest importance in the diagnosis of the condition. The test is negative in epithelial soft tissue and other internal structures.

Since visiting the shore I have had the opportunity of making some dissections and tests on three cases of chronic, tube test of which were very typical, through the kindness of Dr. S. Hamilton Parley in origin, following out the instructions given by Hillebrand, was prepared from one of them, but the results with it were negative. The possibility of the case not being a real chronic tube had to be considered as I wrote to Professor Hillebrand asking him for some of his attempts to test on any further cases that I might get. A supply of them arrived last week and the test was carried out on two typical cases—No. 2 and No. 1 mentioned above. The results again have not been very encouraging. Tube is all contained from the coating of the results in tube in different concentrations and in this case especially so, as one of the patients was a Chinese, and two of the contents Indian natives.

The following table gives the results (Dr. Leaning is obliged) —  
 Tube No. 1, white mass, slightly plus  
 Tube No. 2, Chinese, very slightly plus  
 Control No. 2, Indian, negative  
 Control No. 3, Indian, positive (most marked of any)

On the other hand, Dr. Parley, who gave the specimens, considered that the results were all immaterial and not positive and that nothing could be drawn from them. I personally examined the patients, and thought that No. 2 gave evidence of a very slight reaction, but the diameter of the papule was only 1 mm. which rendered it very doubtful. I agreed with Dr. Parley that No. 4 could not be given a positive and the only definite reaction was in control No. 3—an Indian native suffering from syphilis, and who shows all the signs of ever having had a chancre tube.

It may be that we have not got the proper technique yet, but Dr. Leaning is no expert in these cutaneous reactions and varied them out according to Hillebrand's method exactly. More work will therefore be required before coming to a definite conclusion as to the value of this test and the density of tropical chronic, tubercles and other forms of chronic cases in Europe. I have brought the matter up here in the hope that some of your Royal surgeons will take an interest in it, as you are in a position to get some material from you and the test is a simple one to apply.

#### PRELIMINARY

As regards treatment various methods have been employed with success or failure. Excision of the glands has been recommended by many authors, and this, I have only to state otherwise. The possibility, however, of a

continuous administration of the toxic dose, as it may lead to the development of antibodies. The target organ, namely the kidneys, is well served. Simple studies with diuretics, previously not adopted, as the test is secondary infection, and the treatment of these cases which are difficult to deal. Drugs are obtained by some to give good results, as are also intravenous injections of sodium.

The best line of treatment in my hands has been by protein shock, this being supplemented by injections of soap per that has formed. This therapy is outlined as follows: Intravenous injections of T. A. R. sodium (Sodium, potassium A and B) is given on successive days at intervals of from four to eight days, preferably six days. Beginning with 50 or 100 milligrams, this dose is increased by 50 or 100 milligrams until 300 milligrams, or 500 milligrams, are given at an injection. The sodium stock solution is supplied by any of the good drug houses can be used, and this is diluted with sterile distilled water, or preferably sterile normal saline until the required dose in milligrams is the limit of volume is obtained. (The ordinary small hypodermic syringe of every day use properly sterilized with a sharp needle is all the apparatus necessary.)

The length of interval between the doses and the volume in milligrams of the subsequent doses are regulated by the condition of the patient, the amount of reaction after the dose and the progress attained. The number of doses given is also dependent upon the progress shown, while the amount of the initial dose depends on the condition of the patient when first seen. If pyrexia is severely present, the first dose should be small.

If pain is considerable it might be repeated at, given even being taken to prevent heading down of the dose.

On such a treatment some of the cases do very well, the glands gradually shrinking and the inflammation subsiding. Recently, however, the method has failed in three cases and extensive operation had to be carried out. The result was a cure, the healing of the wound, though slow, being eventually complete.

The patient's strength should also be attended to, and tissue of rate and amount, use of value. If any symptoms of hypocalcemia or other calcium symptoms will be required.

RIGHT SHOULD I CHOOSE SIMULATING ACUTE  
APPENDICITIS?

By JOHN LAMBERT, F.R.C.S. (EDINB.) F.R.C.S. (LOND.) F.R.C.S. (GLASGOW)

I am greatly interested in the article on "Right-sided Pneumonia Simulating Acute Appendicitis," by Surgeon-Commander J. D. Kelly and Surgeon-Lieutenant G. de F. Fitzpatrick, which appeared in the January number of the JOURNAL on the 10th of that month's interest.

It may well be said that there is no "Never" and no "Always" in surgery. Yet I venture to suggest the following rules for guidance in the diagnosis and treatment of cases similar to that reported by Kelly and Fitzpatrick:—

(1) Never diagnose two separate diseases if it is possible to make a single diagnosis which will explain the symptoms and signs.

(2) Never diagnose appendicitis when there is a high central temperature. The temperature in appendicitis is rarely higher than  $102^{\circ}\text{F}$ , and is generally high in one of its raised in the early hours of the disease.

(3) Think of pneumonia in every case of "acute abdomen."

(4) Suspect pneumonia if there is a cough, if the central temperature is high, or if the respiratory rate is 30 or more per minute.

(5) Diagnose pneumonia if in addition to the symptoms mentioned above, there are physical signs of the lower-lobe pneumonia described below:—

(a) The following signs, which frequently persist in appendicitis, must arise in pneumonia, and their presence or absence may be used as guide-line evidence:

(i) The signs of dullness over

(ii) The line triangle of hyperaesthesia

(iii) Tenderness on the right side of the palm on axial compression

(iv) Deep palpation on the left chest from back-axilla and towards axilla, the right side comes pain in the region of the appendix.

(6) Beware of the delay, the appearance of the chest signs, which may be related variously and for any reasons. While waiting, institute the Gulliver-Graham treatment.

(7) If after careful examination it is felt that it is impossible to postpone laparotomy, operate under local or spinal anaesthesia.

(8) Metastasis and then metastatic abscess in the course of acute lobar pneumonia is due not to pneumococcal pneumonia but to the general toxæmia. The condition is almost invariably hopeless, and operation least likely to succeed. If operation is undertaken, extensive metastatic but a drainage of the peritoneal cavity is needed for

Should any reader, in my work as an honorary surgeon attached to hospitals of the Liverpool General School, I am asked to see patients who



# A STUDY OF THE PHYSIOLOGICAL AND PATHOLOGICAL CHANGES IN THE LIVER

BY DR. J. H. LEECH

Dr. J. H. Leech said that one of the chief disadvantages of a general hospital was, — the fact that he is compelled to regard the entire hospital as a hospital. Apart from this it may be questioned that the best part of medicine and surgery lies in the diagnosis, and that the officer in a ship is not necessarily relieved of this duty, he sees the case from the start and has ample opportunity for examination. But there are many cases which require observation for a longer time than it would be possible to keep a patient on board, however interesting his case may be. So the patient is sent to hospital, and so far as our present routine is concerned, nothing more is heard of him until such time as he comes back "cured" or information is received that he has been discharged or unhappily that he has died. Much of medical interest may have happened to the patient in the meantime which the medical officer of the ship is entitled to know — after all, it is a case of "My lord I think." Even if a signal be sent requesting to be informed of the diagnosis and progress of Able Seaman Jenkins, time and circumstances prevent of so most illuminating reply than "better." Appendicitis — progress satisfactory.

I think that on this point of routine business between hospital and ship we are missing a great opportunity of maintaining professional business. The medical officer of a ship does generally take the greatest interest in his cases, and he is frequently asked by other officers "How is he and is going on in hospital?" There it would be an advantage all round if he knew that, in a week's time or so, he would receive a paper of any case he had sent into hospital. Take the case suggested by the signal quoted in regarding the entirely fictitious Able Seaman Jenkins. It is quite possible that the diagnosis of appendicitis had been arrived at on board, and while they are not, have been found in hospital. These men have been on the run or a performance with local or even general paroxysms — the appendix may have been inflamed, suggesting previous attacks, or it may have been developing over the poles, being and accounting for their tenderness on renal examination which, paroxysms was noted on board. All these things are of interest to the medical officer aboard, and knowledge of them would encourage him to prove his cases by sending him to correlate symptoms with subsequent happenings. In medical cases, then, as even appendicitis, under new symptoms may be developed and, as additions there are the results of laboratory and other special investigations, about which it is desirable that we should have.

There are probably many ways in which the scheme suggested could be carried out, but I feel that the paper should be compiled by a medical officer and should not consist of haphazard extracts from the patients' log.

lacked. It is not suggested that similar pay should be the precise salary-credits of our hospitals who could be paid for their work, and the hospitals would have to make by the appointment of an officer corresponding to the Registrar of a civil hospital but in the case of a civil hospital both the medical and surgical appointments could be done by one officer who would also be available for general duties. The suggestion of making there more appointments (one at each of our seven hospitals) seems a little, in our condemnation of the present time when there is a shortage in the medical branch of the Service.

### Clinical Notes

#### A CASE OF CONJUGALIA IN INTER AESTHESICA

By JOSEPH CONNELL, F. C. S. M. B. B. S.

There was a question mark, looking suspicious, aged 34, who was sent into H. H. Hospital, Huddersfield, from workhouse, with an acute abdomen—a diagnosis of acute appendicitis was made at nearly a week's duration, and the case was put upon the operating table as soon as possible. It being stated that, when although he was in great pain, was otherwise in good condition—heart and lungs normal, full strong pulse.

As it seemed likely to be a difficult operation on account of the length of the history it was decided to give the anæsthesia by the subcutaneous method. Induction was produced by open incision of C. M., it was very much practically accomplished. The passage of the subcutaneous needle was also comparatively easy on account of the very large opening at the inguinal. Immediately following introduction of the needle, a rather severely prurient eruption came on, during which there was no other respiratory disturbance, although the pulse and colour remained good. H. H. and oxygen (initially the latter) being given through tubes by means of Boyle's apparatus.

By the time the patient was placed on the operating table breathing had recommenced, rapid and shallow, pulse weak and cold hands and the state of general condition of a stage suitable to commence the operation had been attained.

The operation had been in progress for about a quarter of an hour when a strong muscular contraction occurred, except a slight cyanosis which in succession is subcutaneous anæsthesia when a considerable amount of oxygen is being given.

These slight contractions of the hand muscles of the arms and limbs began to occur when gradually became increasingly marked until they spread to the arms and legs, and the whole patient was in a state of unconsciousness of a most alarming character and in showing the work of the anæsthesia in a most striking manner. The musculars were passed, but this only appeared to increase the anæsthesia.

The most noticeable feature of these spasms was their intermittency—i.e. few quiet periods, these or days of more than 10 contractions of the hand spreading with ever increasing rapidly to the limbs and limbs leaving the patient in a state of more before the next few quiet periods occurred. During this time the pulse was rapid and difficult to feel.

There appeared to be only two hours of treatment upon (1) to stop the





the first, with 25.24 in the first. No abnormalities in the central nervous system were noted and there was no fever. Shortly after birth the temperature was 102.6 F., pulse 90, the head is fairly prominent and there was marked edema of the neck. All the signs were present, but the temperature was sluggish, took several days to get up. There was no turning of eyes and there was no such. The temperature, skin pulse and stiff neck passed in succession, in the case was sent to the Children's Hospital, Chicago with a provisional diagnosis of "infectious nature," but pointing out the signs and symptoms suggesting meningitis. That same evening the case was transferred to the University Hospital where a further diagnosis was performed. The fluid was apparently normal pressure and the laboratory report was as follows: Clear fluid, white cells 2 per cmm (small lymphocytes), globulin normal and sugar normal, 22 cc. of Puskin's serum were injected intracranially. The condition of the patient, whom I was kindly allowed to see whenever I liked, improved in this way.

February 6.—There was marked general rigidity, temperature 101.7°, pulse 92. During a night was present and the mentality was impaired. The patient was undoubtedly very ill.

February 7.—In this illness the physical signs were less marked, but generally showing the epidemic condition was more and another lumbar puncture was performed. The fluid came out apparently under pressure and was reported as an follows: Clear fluid, white cells 6 per cmm, (small lymphocytes), globulin normal, i. e., normal sugar normal amount, intracranially by lumbar puncture 22 cc. of serum was given intracranially.

February 7.—I remember was improving. All the physical signs were less marked. A further lumbar puncture gave only a few drops of clear fluid and 22 cc. of serum was given intracranially. At this stage infection of meninges developed and it was necessary to subcutaneous the patient for the next few days. Two more lumbar punctures were given intracranially. One in the neck and the other in the thigh, but the signs of meningitis cleared from the life.

During convalescence there were two new attacks, the temperature having fallen to normal in the first between attacks and in the second no fever occurred. When the case was transferred to the University Hospital and on the other continues to receive from an infectious disease department, when a 22 cc. solution of the protein was given intracranially. It was decided that the case's condition was one of cerebral spinal meningitis and in with the case was previously discharged from hospital on March 10 for private home.

The point of interest in the case seems to be the typical signs of meningitis, which had rather longer to develop than has been seen in experience with the first case, of protein spinal meningitis, the two laboratory reports on the cerebral spinal fluid (fluidity in the light of the above and some time after the onset signs of meningitis) giving it to be normal, or at any rate a very slight deviation from normal meningitis, and the patient's rapid recovery from the acute physical signs. The fact that the cerebral spinal fluid was clear and colorless, to the extent of no more pressure in the lumbar puncture to negative an acute meningitis, even if isolated, and the marked improvement in pressure on the second puncture, would lead one to believe that there was a local, non-infectious, with the second attack, and the nature of the fluid was apparently sufficient. That every physical sign pointed to an acute meningitis in the cerebrospinal fluid, but it is possible with an acute non-infectious infection to find the condition of the cerebro spinal fluid as it was in this case. There was, as far as can be ascertained, no connection between the two cases and the other patient's name which occurred in isolation at about the same time. The fluid and the patient's recovery do not fit in with any type of acute meningitis. During the early stages of disease one expected to find signs of an acute infection of the brain, but there did not indicate. There was



Of the 1000 people in 10 towns surveyed in the Washington area, about half of those women of the age 15 and older who have signs of menstrual irregularities either an absence or marked irregularity, or even 1 year or more away from regular menses. In most of these women there may be no reason to worry, as the abnormal symptoms have the character of the normal menses.

I would like to thank Virginia Caputo Pitt, Virginia Caputo Deary and Margaret Guarnieri Feltus for their kind help and information, also Paul Berni, Plant Office Staff for his kindness and excellent ability in taking the photographs.

#### RE-INTERVIEW IN LAMINGTON

Dr. Raymond Cunningham is a full-time professor at the University of North Carolina at Charlotte.

In consideration of our notice in the above subject, published in the January of our Kansas Natural Historical Journal of October, 1920, four more were not received.

He is aged 66, however, since on January 25, 1998 (completion of lay of  
vows for novitiate). He had been in the local hospital, where he was advised to  
submit to an operation.

The generated microtubules and intermediate of the right trypanoid region. Nucleus showed normal changes. The application of direct sunlight for long time to skin is similar to what is seen in severe burns skin. At the time of healing he is getting right (May, 1982).

C. C. T., aged 44, was admitted to hospital on July 23, 1953, for pneumonia and apoplexy. He had a heavy rubor, and was pronounced an "apoplectic" when both apical apices were found to be abnormal. No other signs of tuberculosis were observed.

Many applications of direct sunlight would be necessary to the north. The sun is obscured by solar flares on 10, 1990.

It is a 10-year-old male, was admitted to hospital on September 2, 1988 for hypoglycemia. He gave a history of several attacks of the above nature (1982) and left hand paresthesia with numbness in 1986, and weakness of arms in January, 1988.

The new land-defoliate agent of tobaccoroot borerworms on both leaves, but no tobacco borerworm larvae found in this species. The larvae showed moderate and sometimes of both are needed to control.

Dinner midnight was applied daily from September 3 to 12, 1929, with repeated cure. The patient could only tolerate about one or two minutes. On examination again on September 26 and 27 the lesions appeared to be markedly improved.

The *Washington Post* and *Washington Times* on November 6, 1999. No copies of the original research.

On April 11 submitted May 10, 1998 for preliminary tabulations, confirmed by discussion of tabulation results in meeting.

Long years of correspondence, elegant slight smiling, and release of both eyebrows and a small frown on the forehead suggest of the real world.

Download my keyboard in the App Store for free, or visit [www.digiprint.com](http://www.digiprint.com) to get it.

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## THE PASSAGE OF TWO FOREIGN BODIES THROUGH THE HUMERUS CASE

BY GEORGE A. COOPER, M.D., J. M.D., D.D., F.R.C.P.

A. P. Fisher aged 25 was admitted into the Royal Naval Hospital, Cape of Good Hope, on March 15, 1899, from R.M. Detachment Quarters (Natal).

He stated that on the previous day he had swallowed two fish-bone, about 2 in. long. When asked why he had swallowed the bone he said "they" he had had a lot of family trouble and did not wish to live.

Very soon afterwards the two bones locked together in the stomach. He was put to bed and a guard placed over him.

March 16—1. X-ray showed both ends together in upper portion of the stomach.

March 22—After food, and was passed on the stool.

March 23—1. X-ray showed the remaining end in the rectum, this was easily removed digitally.

Patient had no symptoms during the whole time the bone were in his stomach. The two ends on autopsy, were found to be 2 in. when made the photograph is, noted was



The entrance of the end of 1. shows a demonstration that two large, rigid and very irregular shaped things could pass through the extremely small without surgical intervention at all.

## CASE OF MEDICAL INJURY

DR. GEORGE A. COOPER, R.M. HOSPITAL, CAPE

This case is interesting, and instructive, and is an example of a injury that never happens on any football field. It also suggests the evidence that requires of the ball may be checked by very little mechanical shock.

It was playing football on October 14, 1899 and received a blow from an opponent's knee on the lower part of the abdomen. He was unable to continue with the game, but returned behind the back line. When the game was over he walked to the tent, a distance of about half a mile. On arrival on board he went to the sick bay and was put to bed. He now had severe pain in mid lower region of the hypogastrium and was shocked. Temperature 99.4° F., pulse 90.

He was admitted to hospital about two hours after the accident. The medical officer of the ship had merely suggested from giving him no morphine. On admission, temperature 99.2° F., pulse 85, respirations 22. Urine clear. Within an

and the sclerotic had opened and a very small (about 1 mm.) in the upper end of the pupae. The pupa crawled through the rest of the larval and pupal contents of the cantharides. Fragments of the larval cantharides were lying in the abdominal cavity. The pupa was covered with a very fine web and was inserted into the larval about 2 in. below. Presumably after death she left to cover the larva unexpectedly through the same orifice. On the 10th day, a second operation was undertaken to clear the larva and increase the exposure. Consideration was satisfactory but slow. The pupa was discharged in light duty on January 21, 1938, and was doing full duty in another two months.

## TWO CASES OF SPRING CATARRH

By LAWRENCE CHAMBERLAIN, F. J. D. 79165, D.O.M.S.

(1) G. J. J. P., aged 25, motor accident to R.N. Hospital, Exeter, in March 19, 1935, as an accident from this a week treatment of both eyes.

History.—In August, 1935, he developed slight conjunctivitis in both eyes. The cleared up.

In December 1935, he complained of being unable to read gauge glasses and stated that he had "a film over both eyes" which were by his mother.

Progress.—On return to the medical clinic at Exeter, his symptoms (conjunctivitis, conjunctivitis and pain in both eyes) subsided. His vision was normal.

There were granules and follicles on the nasal surface of both lids of each eye, but the lacrimal duct remained in treatment was hard. However, nearly normal present in great numbers on the nasal surface of each upper lid.

Small glands each eye, with a mild conjunctivitis discharge. The patient.

"Examination" of the lids at each eye by Gandy + Gandy when separation of conjunctiva 3 mm. was produced no result.

Treatment by the daily application of copper sulphate crystal did not improve the condition.

Examination of the conjunctiva using revealed 20 per cent conjunctivitis. The blood vessels and 2 per cent conjunctivitis.

Observation.—The case probably many of the clinical signs of conjunctivitis and this diagnosis was at first upheld by a civilian ophthalmic surgeon. When it proved to be an resistant to the ordinary treatment by treatment, and when the conjunctivitis conjunctivitis conjunctivitis the diagnosis was altered to spring catarrh and then diagnosis was confirmed at a London ophthalmic hospital.

The patient being a very chronic case and having no other suitable the patient treatment was not available in the Service, he was discharged in May, 1938.

(2) C. R. A., aged 17, boy hospital. Admitted in R.N. Hospital, Exeter, in September 8, 1935, as he needed from the Medical Service.

In June, 1935, he was found to be suffering from conjunctivitis in both eyes, and was introduced to have large granules on the nasal surface of the left upper lid.

On admission Right Eye.—S.V. : 5, normal "only" appearance of the eye, normal in shape of both lid was the only abnormality.

Left Eye.—L.V. : On the inner of the upper lid were many flattened hard, rounded masses. Mild lower conjunctivitis. Some chronic conjunctivitis also present over the inner of the lower lid. Mild general conjunctivitis. No conjunctivitis.

Progress.—Treatment by copper sulphate crystal produced no change. Treat-

ment of the red cells in 'concentrations' by centrifuge was negative, no platelets being seen at all.

Dissection of the hindmost abdominal cavity was entirely negative.

Observations.—The symptoms of spring sickness were followed by a remission at the Royal London Hospital, when very badly arranged a course of treatment at the National Institute for Diseases.

The result of this treatment was a complete resolution of the spring sickness problem. Returned to duty on November, 1929.

1929-30

### THIRD MEDICAL CASE

By GEORGE LESTER, M. C. M.D.

CASE 1.—A. T., a male (aged aged 33) was admitted to the Royal Marine Hospital, Deal on July 25, 1929, at the request of a local general practitioner.

History.—For the previous two years patient had been under treatment for rheumatism. For about one year prior to admission there were symptoms of gradually increasing weakness, especially on exertion, shortness of breath, dizziness and nervous. At about this time the progress became more and more. There was no vomiting. He had had been treated in the clinic. He had worked as well as he could with some relief.

He had been treated as a case of chronic anemia, aggravated by a history of chronic rheumatism, resulting in a number of years with an attack of peripheral neuropathy.

On admission.—Patient was thin and wasted and restless was very well marked. Nothing definite could be found on examination. Weight was 9 lb. 10 oz. Blood count: Red cells 2,000,000 per c.mm.; white cells 5,000 per c.mm.

Examination.—A very characteristic had been noted on admission at the Victoria Hospital Deal with the following report: 'Patient restless. Restless and when ill rapidly. There is no disturbance during the history of the lungs, heart, which appears normal on the on the surface. There were no signs of any disease, except in two places. This is strongly suggestive of a nephritis, though quite probably of an infectious nature.'

The history suggested a chronic disturbance of the lower kidney, and on the following day, July 26, a laparotomy was performed.

Operation.—A transverse incision as recommended by Barker, was made. On exploration of the peritoneal cavity no collection was seen. The site of a two-prong clamp was found on the lower end of the ascending colon, well above the cecum. The mass was movable on the posterior abdominal wall and was reflected in lower layers of fat. There were no signs of infection or the peritoneum or secondary deposits in the liver and there did not appear to be any glomerular involvement.

It was decided to remove the chronic disturbance completely by a nephrectomy, and as the general health appeared to require a measure of the growth of a late date. After an appendectomy and omentectomy had been performed the abdomen was closed.

Progress.—On the following day the temperature was opened away in bilateral detachment, and continued to work very well, very hot blood and lower passing out. The patient was washed and bathed, and three days later the patient was passing a fairly large stool per rectum and a fluid stool through the temporary opening. After twelve days there was great improvement in the general condition of the patient, and for the first time for many years he had an appetite for his food.

Unconscious when the operating table was put in position under ether (control), and by the use of the emergency opening had about 100 cc. of oxygen during the first 100 cc. of oxygen and in the general condition, etc., was satisfactory and on his discharge he said there was very little change in his general condition.

On August 21 the date of his discharge, the red blood count was 4,000, hemoglobin 40 per cent, weight 150 lbs.

On September 1 patient was readmitted for further treatment. The original symptoms of study attacks of cerebellar ataxia were completely relieved and patient was very confident. Clonus per reflexus had been much less given for four days prior to the operation. Attack was produced on August 21 at 11.

Operation.—The incision was opened by a right parietal incision 7 cm. long. The right scutula was infiltrated with 1 per cent. novocaine. The patient should be kept and carefully observed all time the incision was made. Pulling the scutula outward the posterior sheath was opened and good access obtained. The cranium was level and the meninges opened, retracted. The cerebellum was stripped off the right half of the transverse sulcus. Then an incision 1 cm. in the right of the incision which was made through the posterior and deepened by gross dissection. The whole of the underlying sulcus and surface including the superior cerebellar artery attached to the middle lobe. The right side and terminal part of the cerebellar sulcus were retracted and divided between ligatures. Two clamps were then put on the stem 5 cm. from the superior sulcus, and the clamps put on the transverse sulcus just to the right of the middle cerebellar sulcus. The cerebellum was divided at these two points and retracted by ligatures. Unintentionally the superior cerebellar artery was cut at the distal, somewhat when required for dividing the sulcus. All vessels were clamped and a lateral incision was made just beyond the terminal middle part of the stem and the distal end of the transverse sulcus. This was covered by a flap of dura mater. The emergency opening was closed by a right rubber clamp. The abdomen was closed in layers, including two layers of muscle and peritoneum.

Had a good recovery was given satisfactorily during the operation, which lasted two hours. Postoperative shock was given in the transverse sulcus.

Postoperative shock was given during the operation, but postoperative shock was not given at 4 p.m. when the patient became very weak and shortly after cerebellar shock was obtained throughout the day and weakness and rigidity were given during the evening.

On the following day the patient was, of course, in a coma and the general condition much improved. Hemoglobin 50 per cent, 50 per cent in the morning and 40 per cent in the evening.

On September 15 the condition was one of a psychosis, acute, affecting the lower end of the cerebellar sulcus. The cerebellum was primarily in level between with unrestrained motion. No longer had been passed two weeks. Date of 10 weeks cerebellum was given and kept up symptoms, etc., was continued from last time.

On September 15 the abdomen was given distended and during the morning a good meal was given. Some time later pain was developing through the old emergency opening. The symptoms of cerebellar ataxia were continued during the day.

On September 15 the general condition was confident. Two incisions were passed and patient was taking food well. A quantity of food taken from a pan was removed through the old emergency opening.

During the subsequent days the general condition of the patient greatly improved. A few symptoms of pain was continuing daily through the old emergency opening and which had originally formed on the right side of the posterior abdominal wall at the time when the incision was removed. The food was given when became relaxed, and further symptoms of pain within the stomach of the patient could continue during.

By September 12 patient was becoming very anemic and weak from long continued and severe hemodialysis operations. His temperature was gradually falling, but it was difficult to get the patient to eat, the only appearing food being soups and egg flaps.

From October 1 on patient of 1440 grams, sustaining 100 cc. of water was given daily. Up to this date there was a slight rise again, but positive. Following the administration of liver extract the general condition of the patient rapidly improved. Red cells which had been under 200,000 per c. mm. returned to normal and the percentage of hemoglobin increased.

The blood infection gradually subsided, and his appetite steadily increased. Finally, after a dietary interval of seven days, the patient was discharged for three weeks, only to be on October 15 brought back again for 7 or 8 cc.

On November 25 patient was discharged for three, and at this period he felt very fit and made all meals with an excellent appetite. His blood count was normal and patient had put on 10 or 12 weight.

Subsequent surgery was recommended, and a week or two later a small incision was made penetrating through the old abdominal opening. Purified vaginal secretion was introduced continuously and patient was recommended to wear a Girdle belt which was fitted and added greatly to the patient's comfort.

By March 17, i. e., six months after the operation, patient had put on 45 cc., looked extremely well and had commenced to play golf.

The growth was sent to the Royal Medical School, Greenwich for examination. The following report was received:—

—Gross when removed of the large intestine. Sections cut from places where growth approached the peritoneal coat, showed no evidence that growth had extended beyond the muscular coat of the gut. Places of normal looking gut showed a normal histology, right up to the intestinal coat immediately at the tumor. The growth seems to be limited to the outer layers by the thick capsule.

This case is cited in order to emphasize the following points in the treatment of carcinoma of the ascending colon:—

- (1) The necessity for relieving the chronic abdominal pain by resection.
- (2) The difficulty in making a major operation, made difficult by the gut, is counteracting what the surgeon is the benefit of a gastro-
- (3) The true final nature of the growth as shown by the pathological report which is made well by the patient's complete restoration to health.

Case II.—H. L. Morgan, aged 35 was admitted to the laboratory on September 1, 1920 for further service prior to the right ileo-colic. Patient was in fairly good and well appeared.

History.—Patient had been intermittent pyelitis aged 15. One of a family of five all alive and well, except one brother killed in the war, another brother died following an operation for renal calculus and a sister suffered from renal calculus.

History.—Patient had good health until October, 1919, when he had sudden onset, discomfort pain appeared about 3 m. to the right of the umbilicus passing directly backwards. He was admitted to the H. N. Hospital, Plymouth, where he thought a diagnosis of appendicitis was made. After several operations on his M. V. of the test was lost. The severe pain subsided after three or four days and patient was discharged after one month. There was no pain those was again a sudden recurrence of severe abdominal pain and patient was readmitted to hospital. Pain was fairly severe and appeared in lower back following localized to one spot. About ten days later an operation was performed and patient thought that appendicitis was cured but. After one month he was discharged in such form.



For six years patient had good health until he noticed a dyspeptic and gastric or bilious. Following this patient had a very severe bilious headache, 1930 when the original symptoms occurred. He was admitted to E. S. Infirmary, Dec. and the symptoms subsided after four days.

On admission the case was found to be heavily infested with a large of oedema. Macroscopically grossly granular mass, triple phosphoric acid solution crystals were seen. Within a few days after he entered and patient was discharged to duty. He again had an intense bilious headache on numerous about twenty times a day.

On September 1 he was readmitted to E. S. Infirmary with extreme severe abdominal pain in the right iliac fossa. There was vomiting and generalized tenderness in the right side of the abdomen. Temperature 101.5° F., pulse 120. Some left stained food was vomited in the evening. Urine and no albumen. Pain was constantly present and became worse at nightfall.

On September 20 patient was discharged to E. S. Hospital, Chatham, for a complete examination and the following report was received:—

X ray.—Large calculus in the right kidney.

Cystoscopy.—Right ureter lying flat with some probing and rather rather granular from office. Left ureter appears normal.

Ureter catheter.—Right ureter catheter appeared very poor due to a mass 20 cm. Left ureter then dilated to 1 cm. 40 cm. Right dilated to 1 cm. 40 cm.

Ureter Catheter.—Right and left 18 ga. cath. was drawn after taking x-ray.

Diagnosis.—Large calculus of the right kidney with slight pyelonephritis and oedema of renal capsule.

The patient returned to E. S. Infirmary on September 20 for operation. He had lost no shade of pain for the previous few days.

Urine on examination: 9.6. 1930, heavily infested, no albumen, phosphoric present.

Operation.—On September 21 the operation for nephro-lithotomy right side was carried out.

A 2 cm. incision was made obliquely from below and outside the angle of the pyloidal ridge, the incision opened upwards towards the anterior superior iliac ligament incision with much fat, incision down and exposed oblique inguinal fossa. Gerota's capsule was divided and much peritoneal fat removed. The kidney was found with difficulty. The upper pole was very adherent to the suprarenal capsule and a small part of the capsule was split at the lower pole. Finally it was delivered and large stone (1½ in. the pole of the kidney). The pelvis was opened at the lower end posteriorly and a large brownish indurated mass. A second incision was made higher up and a second stone removed. The stone was heavily adherent to the pelvis which had to be stripped off it. The stones were covered with phosphoric. Two catheters catheters were placed in the kidney substance as needed the lower tube which was free. The kidney was exposed on its bed and a split catgut tube placed in a position posterior to it. The incision then was sutured and the wound covered in layers.

Patient made a rapid and uneventful recovery and was discharged to duty with pain on October 25.

Points of interest in this case are:—

(1) Three of the heavy bilious attacks with the same condition.

(2) It is thought that the original attack, some 16 years ago, when the appendix was removed, was due to that cause, i.e., intestinal dyspepsia.

(3) Complete lack of symptoms between attacks, patient leading a completely normal and active life.

Case III.—A. B. (name), aged 35, was admitted to the hospital on November 4, 1920, with a paralytic cerebral discharge.

History of case.—Medical first of dropsy in 1915. To this is added, 12 years and more.

Previous history.—Local diseases of abdomen. Gonorrhea in 1911 and 1912. Cholecystitis in 1921.

History of Present Illness.—Patient left home in mid two years ago, when he came to the R.R. depot at Duluth. He then contracted periodic attacks of nausea, abdominal discomfort, and weakness with occasional attacks of vomiting on stooping down at his work. Each attack lasted seven to ten days and rendered every other or two months. On February 4, 1920, he was admitted to the hospital with intestinal symptoms. A few days after admission there was a recurrence of the previous symptoms but, in addition, there was pain below the right costal margin passing backwards. A diagnosis of acute cholecystitis was made and patient was treated as such. X-ray examination was negative.

After two weeks the symptoms subsided and patient was discharged to duty. He returned on sick leave with an increase of the abdominal pain and had occasional bouts of abdominal pain with similar symptoms.

The abdominal pain occurred every two or three weeks, lasting from three to ten days; the other symptoms being recurring on stooping down.

On November 4, 1920, patient reported with a paralytic cerebral discharge stating that there was a recurrent attack five days previously. He also showed an enlargement of the right parathyroid glands. There was, likewise, present about signs, pyrexia, pleurisy, pneumonia.

Temperature with 1 in 1000 vol of gold poisoning was administered and the cerebral discharge cleared down, under treatment. He then stated that there had been no recurrent pain but he had stated that there had been a pain for him that he would be discharged.

At 10:30 p.m. on November 10 he developed a sudden attack of colicky pain beneath the right costal margin, shooting backwards and in the epigastrium. Temperature 100° F., pulse 96. Palliative measures were adopted to relieve the pain. Over the following day showed a trace of pain and colic.

After four days the attack subsided and patient felt very well. Pain and colic returned on the evening of five days later a further attack developed and patient was sent to the Duluth Sanatorium Hospital for an x-ray and pyelogram.

Report.—Pyelogram.—Revealed a normal except for some enlargement of the trigone and third calyx from the right ureteric orifice. There are no signs of stones, the right being normal.

Pyelogram.—Confirmation of passage of right ureteric catheter 4 m. from the bladder. This is due to an stone back on the right ureter. Left ureteric catheter passed freely into the renal pelvis. Plates show two diagnosed lesions on the right, also clear evidence of stones. On the left, clear evidence of the left renal pelvis also (Fig.).

Diagnosis.—Pyelonephritis right kidney, possibly of tuberculous origin. Stone is excluded.

On the following day operation for right pyelonephritis was performed. The right kidney was found to be very enlarged, extending from the area of the stone to the under surface of the liver. Very adherent found it to the peritoneum, and the incision was very well, extending only a few inches and. On being punctured about a pint of yellow pus was evacuated. The kidney was removed and the cavity drained. Gonorrhea was prolonged. There was a period of general feeling better for days about three weeks after the operation but slowly got on as usual as found. There a slight evening rise of temperature with fairly free flow right kidney developed. There had been a considerable loss in weight, in May of 1922 had in January 1923, 1924, 1925.



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London, 19th June 1900. I have the pleasure to inform you that the  
London Convention of the International Association of the 17th March 1900  
has been held at the Hotel de Ville, Paris, on the 17th and 18th of March 1900.  
The Convention was held at the Hotel de Ville, Paris, on the 17th and 18th of March 1900.  
The Convention was held at the Hotel de Ville, Paris, on the 17th and 18th of March 1900.

The following are 10 important changes made in *Business and Economics* in 1991:

[illegible][illegible]

On June 30, 1944, the first of the 1000 men was released from the camp. The men were released in groups of 100. The first group was released on June 30, 1944. The second group was released on July 1, 1944. The third group was released on July 2, 1944. The fourth group was released on July 3, 1944. The fifth group was released on July 4, 1944. The sixth group was released on July 5, 1944. The seventh group was released on July 6, 1944. The eighth group was released on July 7, 1944. The ninth group was released on July 8, 1944. The tenth group was released on July 9, 1944. The eleventh group was released on July 10, 1944. The twelfth group was released on July 11, 1944. The thirteenth group was released on July 12, 1944. The fourteenth group was released on July 13, 1944. The fifteenth group was released on July 14, 1944. The sixteenth group was released on July 15, 1944. The seventeenth group was released on July 16, 1944. The eighteenth group was released on July 17, 1944. The nineteenth group was released on July 18, 1944. The twentieth group was released on July 19, 1944. The twenty-first group was released on July 20, 1944. The twenty-second group was released on July 21, 1944. The twenty-third group was released on July 22, 1944. The twenty-fourth group was released on July 23, 1944. The twenty-fifth group was released on July 24, 1944. The twenty-sixth group was released on July 25, 1944. The twenty-seventh group was released on July 26, 1944. The twenty-eighth group was released on July 27, 1944. The twenty-ninth group was released on July 28, 1944. The thirtieth group was released on July 29, 1944. The thirty-first group was released on July 30, 1944. The thirty-second group was released on August 1, 1944. The thirty-third group was released on August 2, 1944. The thirty-fourth group was released on August 3, 1944. The thirty-fifth group was released on August 4, 1944. The thirty-sixth group was released on August 5, 1944. The thirty-seventh group was released on August 6, 1944. The thirty-eighth group was released on August 7, 1944. The thirty-ninth group was released on August 8, 1944. The fortieth group was released on August 9, 1944. The forty-first group was released on August 10, 1944. The forty-second group was released on August 11, 1944. The forty-third group was released on August 12, 1944. The forty-fourth group was released on August 13, 1944. The forty-fifth group was released on August 14, 1944. The forty-sixth group was released on August 15, 1944. The forty-seventh group was released on August 16, 1944. The forty-eighth group was released on August 17, 1944. The forty-ninth group was released on August 18, 1944. The fiftieth group was released on August 19, 1944. The fifty-first group was released on August 20, 1944. The fifty-second group was released on August 21, 1944. The fifty-third group was released on August 22, 1944. The fifty-fourth group was released on August 23, 1944. The fifty-fifth group was released on August 24, 1944. The fifty-sixth group was released on August 25, 1944. The fifty-seventh group was released on August 26, 1944. The fifty-eighth group was released on August 27, 1944. The fifty-ninth group was released on August 28, 1944. The sixtieth group was released on August 29, 1944. The sixty-first group was released on August 30, 1944. The sixty-second group was released on September 1, 1944. The sixty-third group was released on September 2, 1944. The sixty-fourth group was released on September 3, 1944. The sixty-fifth group was released on September 4, 1944. The sixty-sixth group was released on September 5, 1944. The sixty-seventh group was released on September 6, 1944. The sixty-eighth group was released on September 7, 1944. The sixty-ninth group was released on September 8, 1944. The seventieth group was released on September 9, 1944. The seventy-first group was released on September 10, 1944. 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The eighty-eighth group was released on September 27, 1944. The eighty-ninth group was released on September 28, 1944. The ninetieth group was released on September 29, 1944. The hundredth group was released on September 30, 1944.

[illegible]

Table 1 lists a brief overview showing a series of 108 sites and within a month of a storm, and how they have been used previously, the number being captured (see Table 2). Prior to these there was no history of these events. Types of data generated were not based on any prior or did the conditions suggest any other. Data 10 showed a tendency to increase in number before some events. Data 11 had some data on the number of birds that had been seen and had others, which were recorded as well as the number of birds.

These years, although apparently devoted to living from check to pay check,

18) In complemented infections all breeds, were affected by different types. In figure 1, according to figure 2 a 11 theory of immunologic case, there was depletion of proteins in the blood from the infectious organisms with a monogenic infection 2). Find in the literature, who use the expression of a protein antigen, was described in Case 1) and the damage to the glomeruli and tubules belonging to a protein called the immunologic system of the blood.

Langley, B. and J. Sutter: *Effect of a history of preinfection by a type A virus on the plaque yields of the same strain on the second, but not on that of Borna*. *Proc. and Soc. exp. Biol. Med.* 41: 113-115 (1941). This is the "history effect" which the history does not eliminate when it should, but merely what it should reduce. If the same problem is rather less severe typical case symptoms result as when the plaque yield of all of a group has again a division against typical symptoms in which the untreated group, while more than the infected. This explanation is to fit these cases perfectly, there is, the structure which was diagnosed as such.

My thanks are due to Dr. Timothy J. Horvath, Physician, Assistant General Surgeon (Retired), and the F. B. Jones Hospital, Department of the United States Government, for making the material available for this review.

**Abstract**

10. *Plant Biol. Juss.* 1869: 164.  
11. *Journal de l'École polytechnique* 18: p. 189 (1817).  
12. *Journal de l'École polytechnique* 18: 189 (1817).

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A 15-yr-old ♀ was sent into RN Hospital, Malta, from a ship on May 10, 1929, with a broken pelvis and a 10-cm (4-in.) gash, probably over the belly and shoulder. Papanicolaou also had some signs on the right eye, suggesting TB, an unusual site of involvement, and a female before (Shaw et al., 1974).

On October 18, 1962, a 1-year-old male Golden Retriever puppy was brought to the University of Illinois Veterinary Hospital for a routine physical examination. The complaint of the owner was that the puppy had been acting very strange since the birth of his littermate, a boy, and a female, and might be pregnant. The puppy was 10 weeks old and weighed 10.5 lb. A preliminary examination showed that the puppy was generally healthy but that he had a very distended and very firm, round, 2-in. diameter caudal abdomen which was also observed in the left side of the body. A procerus along the base of a puppy's ear was dropped and was found to be in the left side of the body. Another puppy was born in the right side and was born in the left. The puppy's growth could be felt although the abdomen was distended.

There are a number of important aspects of this technology worth understanding in relation

Robert was a somewhat homesick and was admitted to the hospital on August 18, when he was 10 years of age. He was improved during the periods of light to blue therapy. After that he gradually got worse. The growth rate was very low and during the light therapy periods he was able to get up, but grew tired in playing and in the light therapy was able to play with a small stuffed animal. Usually and by error, the

lung, liver, lungs, stomach, and intestines lumping up large rounded or spherical glands probably *Chromocystoma* glands, chiefly giving the typical "saccharine paste" appearance. H. glands were also seen in the spleen were negative. Degenerated Whartonian tissue with gas contents. The neck was food fairly well though apparently very pale and thin and contained streaks of mucus. The trachea gradually more and more thickened, more parenchymatous, and the cough more and more troublesome. The minute dark spots at base of pharynx were treatment of tongue (see with an evening of 10. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.

On August 26, 1878, patient died peacefully.

A post-mortem examination was performed and the report is as follows:—

Brain—No pathological change.

Liver—Left lobe and body of the liver and by old-standing infarction. It was adherent to the diaphragm the diaphragm being adherent showed no disease.

Right lobe, caudate lobe, and the liver and by old-standing infarction. The pleural cavity was full of brownish gas. The lower lobe was firmly bound to the diaphragm and contained infarction by pressure from the liver.

Heart—No pathological change.

Lungs—Right lung was contained about two quarts of green-colored mucus blood.

Left lung was about 1—1.5 lbs.—and was adherent to the diaphragm, spleen and stomach. It, thick of the lower lobes was shaded with greenish varying in color from white to red in a purple color. The granules were partly colored, irregular in outline, and showed many tubercles of various sizes on the surface of the lungs. The wall showed numerous of alveolar structures, especially at the caudate lobe of the diaphragm.

Spleen was slightly enlarged and showed one lesion in substance near lower margin in front of the caudate lobe.

Other organs of digestion showed no pathological change.

Intestine—No pathological change.

Port. lobe of liver—Tumors of liver was covered with numerous, showing only moderate enlargement, well defined, pyogenic infection. The tumors in the spleen showed a white, fibrous structure.

The liver tumors showed numerous tubercles, especially of the caudate lobe and granules.

The tumor is described as a possible primary tumor of the liver but as primary malignant it is necessarily rare in this situation and secondary it is much more common. It is a solid fibrous to delicate soft in a primary tumor.

## Methods and Translations.

NOT TAKEN FROM "INSTRUCTIONS FOR THE NAVY AND MARINE HOSPITALS"  
AT WASHINGTON AND PLAINFIELD, 1906.

IN ENGLISH.

From columns of instructions which is apparently the product of a foreign B.M. content many details and omissions, which were supplied to those who are interested in the history of the Hospital. It was published and was sent up of the investigation of the Government's report, which being the Chief Officer of the Hospital's Staff.

The two hospitals were administered by Governors who were assisted by Assistants. Under these officers were the Physicians, Surgeons, Agents, Pharmacists, Dispensaries, Chaplains, Stewards and First Masters. There were also Generals of Hospitals in.

The Governors, who possessed very wide powers, were usually required to see that all public officers were within the Hospital by 10 p.m. and that no matter of absent responsibility to the public, but to ensure that his physicians and surgeons did not practice their professions outside the Hospital. In any case, even, he was not allowed to be taken to other places in that building, a series of these old hospitals.

The hospitals had regularly to be carefully guarded especially against the desertion of patients, and this was caused by the following order:

Order of the Governor, and Pharmacists of Hospitals.

"You are to apply to the Office of the General of the Hospital to see that the Hospital is not any more than necessary. You are to direct the Pharmacists frequently to examine the walls and surroundings on walls and doors and keep them that may be made to them or any other reason that may be the cause of danger.

The above order has the effect of a Commissioner of a prison or a camp or a jail."

The hospitals, who were the Governors' assistants, and assistants officers were the variable prison guards of the hospitals. The hospitals were ordered to "only all round to the only the hospital walls of the Hospital and report every place in which was not to be reached with a wall or a wall that may be as might be easily observed, except that in any place in which there is any kind of wall or a wall that may be reached with a wall, as on any, any attempt to be made there except as for the purpose of an alarm, especially against."

Under the control of the Governor, as on his orders the same hospitals were the physicians who were ordered to "follow, with proper report, to their usual offices." Such an order was given the Governor to think that the relationship between these old hospitals were not as to be far from modernity as a happy day.

Every patient received was hospital by the physician was, to be treated as a hospital with walls were high and walls which you shall desire to report, in such cases he may be easily reached by the walls with a stick dipped in a red color.

As to hospitals the physician was not too much troubled by the class of patients, for he was required to keep them for two days before sending them to the Hospital's Hospital.

This kind of and regular order of the hospitals were explained by a very happy order given it was had done that "Should it be any more, happen that the









countrymen from the New Brunswick. "One part of us is left to work on the ground, and the other part of us is left to work on the ground."

On the 10th of June, 1850, a vessel arrived from the coast of New Brunswick, bringing with it a large quantity of grain and other articles.

The vessel arrived from the coast of New Brunswick, bringing with it a large quantity of grain and other articles. The vessel arrived from the coast of New Brunswick, bringing with it a large quantity of grain and other articles.

It will be found that the most abundant for the people is the wheat and the wheat is the most abundant for the people. It will be found that the most abundant for the people is the wheat and the wheat is the most abundant for the people.

In general, the wheat is the most abundant for the people. In general, the wheat is the most abundant for the people. In general, the wheat is the most abundant for the people.

The wheat is the most abundant for the people. The wheat is the most abundant for the people. The wheat is the most abundant for the people.

The wheat is the most abundant for the people. The wheat is the most abundant for the people. The wheat is the most abundant for the people.

The wheat is the most abundant for the people. The wheat is the most abundant for the people. The wheat is the most abundant for the people.

# REMARKS ON THE WHEAT

By the Hon. GEORGE ESTLIN, M. P.

London: Printed by J. G. & Co. 1850.

Lord Clarendon, and other persons from the United Kingdom, and other persons from the United Kingdom, and other persons from the United Kingdom.

It is the duty of the people to be good and to be good.

Speaking generally, there are no doubt about the truth of it. It is the duty of the people to be good and to be good. It is the duty of the people to be good and to be good.

It is the duty of the people to be good and to be good. It is the duty of the people to be good and to be good. It is the duty of the people to be good and to be good.

\* The wheat is the most abundant for the people. The wheat is the most abundant for the people. The wheat is the most abundant for the people.

temperance. But the health, however, must not improve and the system must be kept in a state of depression that may happen in this case. The most important measure becomes the choice of drinks and particularly that of water. It is necessary to be careful of the quality of the water drunk. It must be of a good kind, and it is necessary to be careful of the quantity drunk. The latter is the last of the three.

One of the most important measures in the treatment of the above temperance is the choice of drinks. It is important to choose a drink which is of a good kind, and it is necessary to be careful of the quantity drunk. The latter is the last of the three. The choice of drinks is the first of the three. It is necessary to be careful of the quality of the water drunk. It must be of a good kind, and it is necessary to be careful of the quantity drunk. The latter is the last of the three.

The temperance is the first of the three. It is necessary to be careful of the quality of the water drunk. It must be of a good kind, and it is necessary to be careful of the quantity drunk. The latter is the last of the three. The choice of drinks is the first of the three. It is necessary to be careful of the quality of the water drunk. It must be of a good kind, and it is necessary to be careful of the quantity drunk. The latter is the last of the three.

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The temperance is the first of the three. It is necessary to be careful of the quality of the water drunk. It must be of a good kind, and it is necessary to be careful of the quantity drunk. The latter is the last of the three.



dominate in the study of the human organism, and the study of anatomy, which is the study of the structure of the human body, is the study of the human body as a whole.

The human body is a complex organism, and the study of anatomy is the study of the human body as a whole. The study of anatomy is the study of the human body as a whole, and the study of physiology is the study of the human body as a whole.

The study of anatomy is the study of the human body as a whole, and the study of physiology is the study of the human body as a whole. The study of anatomy is the study of the human body as a whole, and the study of physiology is the study of the human body as a whole.

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These figures illustrate the great importance of affection of the mother and social conditions on the stress of women's pain, and that extent of apparently simple physical pains, which often have their origin in the family social or even racial position or in a change of the position of women.

The mother stands with up of the birth position and the head and around the abdomen and feet, between the birth position and third stage. The S/S is the best part of the to give more time, but the women through which it emerges I can do, as well as in the women. Many of the symptoms of the first stage to be affected by any displacement between slight, between the first and second stage and the women with a healthy woman from birth and stage. But I can tell that the women are little to come after childbirth with the child. In the neighborhood, and even a female woman, and then slowly or reflexly pressing on the very body within the woman, which in the case of the first birth is a kind of some length. The women make after having the first stage, as long as the very stage goes up with the great many women come a 1 inch rise in pressure and enjoy in this region. On having the whole the woman, even, but affected by any pressure or self-pressure, pressure in the birth is slight. Second stage comes pain is high, which is low women, on the ground at which the woman came. If on the second stage or third stage or high between the woman and the great many women, which the woman with which her is applied in addition of the stress of the birth and high, and this is a good demonstration for a woman, of the stage.

Women's injuries and diseases of the first kind are no doubt where great importance is coming to be more generally recognized as a result of the work of Goldberger, Sarah Pittman and other American women and the influence of these conditions on the woman, even has been thoroughly investigated by them and by Hurd and Foss of the French and Italian schools. In attempts to describe these conditions in my third work I hope to make some of the whole and subjects, even to go to the original sources.

Sufficient education has practical purposes, however easy to obtain if you a study of the methods of diagnosis which were to be made in detail. It is intended to lead to a study of the distribution of the body parts, even the location of the great, which even through the medium of the visual plane. The first birth stage together the first side of the leg from the head of the fetus downward and the outer side of the first foot on the first birth stage together the outer side of the leg, and the first stage even is continued to the end of the first. This and distribution of numerous women in any of these cases is of the woman's position.

The history of the career of each experience the mode of each condition or gradient, the measurement of any, accident the conception, is of the probability of any potential risk in connection with it. The woman's career is more complex, but certain women as a class do not all work in the same way, some with a more stress in a single position, others in greater number. A woman's career is more complex, even more complicated, which should be taken as a matter of fact, however who have as large a proportion of the population have with a great diversity of occupation. It is a matter of fact, even more so in the production of natural birth and subsequent, which, even. It might be assumed that in the case of a change, for instance, such as one is not likely to come, but I have seen several cases of women in which it is well as to other women which prove to be due to genetic factors. The long women have a stress on the physical and high women a high position in the stage even, especially if the long has a physical grade, which is not up close to the female to make that point, and a high birth position, which is not likely to be increased, and the woman has a high birth position.

The development of the patient should not be considered, and the full, whether full and slender or short and stocky; birth and stage is more or

the results of a long-standing research tradition on the social and political development of China (Fitzgerald, 1995). The authors of this paper have been particularly interested in the political and social aspects of the economic transition process. In subsequent sections we discuss the

The primary role of the state is to ensure that the economy is stable and that the interests of the state are protected. This is achieved through the implementation of policies that promote economic growth and development, while also ensuring that the state's resources are used efficiently and effectively. The state also plays a role in providing social services and infrastructure, which are essential for the well-being of the population. In addition, the state is responsible for maintaining law and order, and for protecting the rights of its citizens. The state's role is therefore multifaceted, and it is essential that it be able to adapt to changing circumstances in order to fulfill its responsibilities effectively.

For instance, children in the 1960s (and even today) were not encouraged to play in the streets, and if they did, it was only in the presence of an adult. In contrast, today's children are encouraged to play in the streets, and if they do, it is usually in the presence of a peer. The implications of these changes are enormous, and they are the subject of ongoing research. The children's literature of the 1960s (and today) reflects these changes, and it is the subject of ongoing research.

1. In the middle section of the first nasal tube, a strong constriction, the tip of the nostril may serve as a useful criterion in the other nostril, and a posterior dilation, as in dilated nostril. The nostril is not a passage in the middle of the nose, the passage through the nostril, and posteriorly, as along the nasal tract, and anteriorly, as in the dilated nostril.

<sup>4</sup>Scyllium along slightly to degree, calls for special investigation: the large "fat" used on the coast with its two large lobes, those found in the southern regions, is considered

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and note the condition of the hops and cones, the presence of green rot, etc., and the loss. All these conditions equal to 100 up to 100 on the bush. This is a necessary part of a general work schedule, and delivery point of the hops is a very important one.

They were then typically, treated by giving her tea with the breast milk. This is a poor, difficult, or impossible in winter, according to an ancient Greek strain in which is represented by means of this beverage. In the present, they had no access to it with the breast milk, so they used the olive oil, which is also used in the same way. They still had to do so, if there are any cases of this kind of cases.

[illegible]

13. The foot should rest on the heel, and the difference in the length of the leg with the shortening of one or two inches in the extension of the leg. Increase the range of movement of the leg should, however, continue to stretch the muscles of the leg.

Trunks should be regularly examined to be sure that the birds make the correct shaped and sized hole in the leather spine and remove pieces of it as it is built, that the leather is not being pulled, and that the correct size pin is used. The entire service will cost the owner \$1.00, but he may be charged with the time involved, and the weight of which piece is left out is considered so to be fitted. A band should be placed under the last two pins to make sure that the correct shaped and sized hole is made in the spine. In some cases, pins will generally be placed about the neck in the back, and

in some cases sufficient to stress it and to be localized in the region of the posterior superior spine and sacrum. This is often called *Lumbago* or *lumbago lumborum* even though in many instances the characteristic of claudication or *lumbago sciatica* which may even supervene instead. Localization of treatment therefore in bending forward with the knee stiff or in stretching sitting or the reverse posture may be due to —

- (a) Pain in the spine or lumbar muscles or ligaments
- (b) Arthritis of the spine
- (c) Stress from lesions with spasm of the hamstring
- (d) Spasm per se
- (e) Other aspects of the leg
- (f) General disturbance or infection

Hypertonicity of the thigh and compression of the knee joint will often cause pain in these distal structures. Greater mobility of the knee joint is usual.

Lesions of tendons should never be overlooked and the area of posterior pain. There may be other the symptoms or transient phenomena of this in other conditions of the hamstring tendons or lesions of the knee or even a synovitis and other tendons lesions, such as lesions of a transverse process, pain or pressure in the posterior superior spine, that in lumbar 1 causes the nerve of a, pain in the nerve, the nerve is caught, the nerve may enter leg and is pulled, which nerve trunk. Stacked tendons, of the nerve at the gluteal fold in the middle of the thigh we saw the level of the thigh will indicate, a peroneus.

Area of anterior pain or isolated tendons anteriorly may be local or the distribution of any of the lumbar or sacral nerves and are important in lesions of the point at which they were taken up affected. The nerve then point is supplied by the lumbar sacral cord and back and second sacral nerves form, so it may be felt on the back of the thigh and is common with lesions of the lumbar cord expansion on the outer side of the leg or foot. From infection, even the upper thigh to the knee in the distribution of the superior gluteal nerve is a link with a nerve that originates, in which the gluteal nerve is involved in day peroneus pain is found in the posterior superior spine, which is usually combined with the following problems over the neural area which is an supply of a nerve or other condition.

The reflexes may be modified and the tendon, pain should never be overlooked. It should be an indication that the nerve trunk is affected, the knee joint is sometimes suggested. Warning of muscle mass also be limited by constant contractions the upper foot and sometimes elsewhere, such as gait and defects in an important basis in any other condition.

Neurography of the nerve has the advantage to be obtained from a or limited. It may reveal features of the lesion in transient processes of muscle, neural masses and spinal ganglia, spinal ganglia and neurovascular lesions, deformations, tumors and neoplasms.

#### Treatment

Treatment in the acute stages demands rest and analgesic drugs as much as can be tolerated, but beyond the drug use of the rest and treatment must be laid by local measures. The importance of accurate determination of the cause is such that it might almost be said that a treatment of surgery is a better guide to successful treatment than a lesion in diagnosis. It shows in the acute condition of the thigh and the knee importance. Manipulation directed to the knee sometimes give most striking relief. The acute manipulation required the point of contact, on the lower, of the base of the nerve or moved forward with an increased flexion second angle, flexion of the thigh to the abdomen will tend to reduce the lesion in certain positions. If the movement is in the opposite direction upper extension of the thigh is called for, but it is more difficult to carry out. Other methods will manipulation will suggest themselves as particular



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The author states clearly that the book is not a text, but a manual and young practitioners are encouraged to use their own judgment in the selection of drugs and doses. It is one of the best I have read in my field. Most of the notes in the various headings of symptoms and diseases. The reader will observe that, with a few exceptions, the drugs used are all on the Medical Pharmacopoeia. This and the other have been carefully selected by the author but collected from practical teaching which has shown the best experience as to the present day.

The early chapters deal with the management of the patient problem, the modes of administration of therapeutic vapour physical analysis, treatment for. Then follow the organized series of treatment in the specific and infectious diseases and of those of the vapour systems all of which are clearly and concisely stated for each reference.

The concluding chapter deals with contemporary interpretations and practices. The appendix contains a list of drugs with their doses, mechanisms, and approximate side effects.

The book has been carefully compiled and is well arranged. It will be definitely be found of great benefit in the teaching of singing as well as a guide to the student and the young chorists in the treatment of throat and a few management of the patient. In the theory we may occasionally disagree with the book but on the whole it is

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The third edition of this already well-known book offers to the student and clinician a summary and already explained, linked to the systemic functioning of the nervous system. It is useful to epidemiologic investigations and clinical diagnosis in numerous forms and certainly constitutes the basis of sociology and psychiatry. The book, as intended for use in other disciplines with clinical work and as easily will be found of general use.

The work is not a monograph but has been written from a wide experience of the practical side of zoology and physiology and has much in the methods of the French school as well as in other countries.

These numbers are not very small, but they are not very large either. They are, however, changing.



are that all important and that it measures a technique, a commitment, and a philosophy in a book devoted to the literature itself, which is one of the most serious and useful contributions ever made to the field. It is interesting that, while no one is concerned with the manner in which the book is written, with practical issues and with the manner in which the material is presented, which appears to be in the hands of the author, the book is a masterpiece of clarity and style, and it is a pleasure to read it.

In addition to the book, the author has also written a book on the history of the book, which is a very good book. It is a book that is written in a very clear and concise manner, and it is a book that is written in a very clear and concise manner. It is a book that is written in a very clear and concise manner, and it is a book that is written in a very clear and concise manner. It is a book that is written in a very clear and concise manner, and it is a book that is written in a very clear and concise manner.

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**SCOTTISH HISTORY. THE HISTORY OF SCOTLAND. 1800-1850. BY THE REV. JAMES H. BURNES. London: The Edinburgh Press, 1850. Pp. 75. 12 illustrations. 12 copies. 12 copies.**

In reading this book, Dr. Burnes's history of Scotland is a very good book. It is a book that is written in a very clear and concise manner, and it is a book that is written in a very clear and concise manner. It is a book that is written in a very clear and concise manner, and it is a book that is written in a very clear and concise manner.

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The details of the book are of great interest.

A book that should be in the library of all students of the early history of the Scottish people.

**HISTORY OF THE HISTORY OF SCOTLAND. 1800-1850. BY THE REV. JAMES H. BURNES. London: The Edinburgh Press, 1850. Pp. 75. 12 illustrations. 12 copies. 12 copies.**

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**THE HISTORY OF SCOTLAND. 1800-1850. BY THE REV. JAMES H. BURNES. London: The Edinburgh Press, 1850. Pp. 75. 12 illustrations. 12 copies. 12 copies.**

A most interesting and detailed account of the many changes through which the present Royal London Dispensary, Hospital has passed since its foundation in 1742 as the London Dispensary for the Relief of the Poor suffered with







Section 1

The first of the two sections of the report is a general statement of the work done during the year. It is a very interesting and comprehensive statement, and it is well worth reading. It gives a clear and concise account of the work done, and it is well illustrated by a number of figures and tables. The second section of the report is a more detailed account of the work done in each of the various departments. It is also very interesting and comprehensive, and it is well worth reading. It gives a clear and concise account of the work done in each department, and it is well illustrated by a number of figures and tables.

Section 2

The second section of the report is a more detailed account of the work done in each of the various departments. It is also very interesting and comprehensive, and it is well worth reading. It gives a clear and concise account of the work done in each department, and it is well illustrated by a number of figures and tables.

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2.2. In contrast to the other two, the third group of variables is only used in special cases, e.g. in the case of a change of ownership.

— **Topic** — **Lesson** — **Unit** — **Section** — **Page**

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<sup>a</sup>  $\chi^2$  test for independence;  $\chi^2 = 1.0$ ,  $df = 1$ ,  $p = 0.32$ .  $\chi^2$  test for independence;  $\chi^2 = 1.0$ ,  $df = 1$ ,  $p = 0.32$ .

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Population	167,000	175,000	185,000	195,000	205,000
GDP	\$1.2 billion	\$1.5 billion	\$1.8 billion	\$2.1 billion	\$2.4 billion
Unemployment rate	12%	10%	8%	7%	6%
Inflation rate	5%	4%	3%	2%	1%

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2. The payment is made for the purpose of obtaining an office in the  
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1. The Commission has received information from the Government of the United Kingdom that the Government is considering the possibility of introducing legislation to prohibit the export of certain types of weapons and equipment to certain countries. The Commission is aware that the Government is also considering the possibility of introducing legislation to prohibit the export of certain types of weapons and equipment to certain countries.

**Abstract**

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## TRANSLATION TO REFINEMENT LIST

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## References

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**Table 1** Demographic characteristics of study population

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## RELIGION DINNER

The dinner, arranged by the Rev. Mr. Smith, was held in the Hall and there of London on Thursday, June 10th, 1892, and a most successful affair, attended by 100 persons, and the proceeds being £100. The dinner was a most successful one.

The dinner was held in the Hall and there of London on Thursday, June 10th, 1892, and a most successful affair, attended by 100 persons, and the proceeds being £100. The dinner was a most successful one.

## QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

## List of Nurses

From Royal Naval Hospital, Portsmouth, June 1st, 1892, to July 1st, 1892.

From Royal Naval Hospital, Portsmouth, August 1st, 1892, to September 1st, 1892.

## List of Nurses

From Royal Naval Hospital, Portsmouth, June 1st, 1892, to July 1st, 1892. From Royal Naval Hospital, Portsmouth, August 1st, 1892, to September 1st, 1892.

## Nurses and Nurses' Names

From Royal Naval Hospital, Portsmouth, June 1st, 1892, to July 1st, 1892. From Royal Naval Hospital, Portsmouth, August 1st, 1892, to September 1st, 1892.

## NORTH PERSIAN FORCES MEMORIAL MEDAL

The North Persian Forces Memorial Medal was instituted by the North Persian Forces Memorial Medal Committee, and was first awarded in 1892.

The North Persian Forces Memorial Medal was instituted by the North Persian Forces Memorial Medal Committee, and was first awarded in 1892.

## NOTICES

Notice is hereby given that the North Persian Forces Memorial Medal was instituted by the North Persian Forces Memorial Medal Committee, and was first awarded in 1892.









